DOCUMENT RESUME

ED 032 687 EC 004 482

Perspectives on Human Deprivation: Biological, Psychological, and Social.
National Inst. of Child Health and Human Development, Bethesda, Md.; Public Health Service (DHEW), Washington, D.C.
Pub Date 68
Note-329p.
EDRS Price MF-$1.25 HC-$16.55
Descriptors-Behavior Development, Biological Influences, Cognitive Development, Cultural Disadvantagement, *Disadvantaged Youth, Emotional Development, *Environmental Influences, *Exceptional Child Research, *Human Development, Infants, Language Development, Maturation, Motor Development, Personality Development, Prenatal Influences, Psychological Needs, *Research Reviews (Publications), Social Development, Social Factors, Social Structure

The work of four task forces on human deprivation is reported. Aspects of deprivation treated include psychosocial deprivation and personality development; influences of biological, psychological, and social deprivations upon learning and performance; socialization and social structure; and biological substrates of development and behavior. For each aspect, research is reviewed and suggestions are made for future research. Also provided is a synthesis of a 2-day conference on research policy for psychosocial deprivation which concerned itself with the areas mentioned above. (JD)

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EC 004 [redacted] 482

PERSPECTIVES ON HUMAN DEPRIVATION

BIOLOGICAL, PSYCHOLOGICAL, AND SOCIOLOGICAL

PERSPECTIVES ON HUMAN DEPRIVATION:
BIOLOGICAL, PSYCHOLOGICAL, AND SOCIOLOGICAL

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
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The National Institute of Child Health and Human Development

Cover: Detail from "Mother," lithograph by Kathe Kollwitz, 1867–1945, Rosenwald Collection. Courtesy of the National Gallery of Art, Washington, D.C.

National Institute of Child Health and Human Development
National Institutes of Health
Public Health Service
U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
1968

The Issue

Can we construct a society with what we have learned and with what we are learning and with what we have yet to learn, in which each person, of whatever ability, can be an integral part of the whole, with a genuine share in its purposes—where each person has not only the resources for his elemental needs, but also the opportunity to become truly human by the knowledge deep within him, that he and his contribution are vital to society's endeavors?

PREFACE

It was in response both to its mandate and to the compelling nature of the problems of our times that the National Institute of Child Health and Human Development undertook a broad-based assessment of psychosocial deprivation, in order to ascertain the state-of-the-art, to identify gaps in knowledge and understanding, and to determine the implications of the findings for research policy and for social action programs. The Institute is uniquely equipped to examine the area of psychosocial deprivation due to: (1) its concern for child health—in the broadest sense—and human development across the life span, and (2) its multidisciplinary approach to multidimensional problems that bridge the biomedical-behavioral domain. Since the effect on individuals of deprived or disadvantaged circumstances has primary relevance to their areas of concern, the staffs of three of the Institute's programs—Growth and Development, Mental Retardation, and Adult Development and Aging—coordinated their efforts in this task.

As the work began, it soon became apparent that there is neither a broadly shared conceptual perspective on the meaning and nature of psychosocial deprivation, nor a well-established and comprehensive base of empirical knowledge concerning its consequences. However, psychosocial deprivation appears to involve a complex set of physiological-genetic, cognitive-learning, social-emotional, and social-structural causes and consequences. These causes and consequences dynamically interact to produce a condition, and the consequences of that condition, which society regards as dysfunctional. For the individual, the result may be modification of physical structure and function, as well as behavioral patterns which may affect the individual's social and/or intellectual functioning. The functional level of individuals may then affect social structures, which again affect the individual. It seems necessary, therefore, to understand with great specificity, the significant determinants and consequences of this continuing circularity of cause and effect. The aim is to attempt to elucidate the kinds and nature (including critical time periods and degrees) of life experiences and/or deficits that significantly impede individual function.

For help in the assessment of psychosocial deprivation, the NICHD turned to the scientific community. In March 1968, four interdisciplinary task forces were established to undertake documented reviews of four component areas of psychosocial deprivation. Fifty scientists contributed papers on various aspects of the phenomenon and these have been synthesized into four chapters.

A relatively short time period was available for producing the manuscript. As a result, the 50 substantive papers were written within a period of approximately 4 to 5 weeks and these were integrated into the first drafts of the four chapters within 3 to 4 weeks. Due to this kind of time pressure, there is no claim to comprehensiveness in coverage of the areas concerned. However, the quality of the work remains unusually high and the coverage surprisingly broad.

As evident from the titles—"Psychosocial Deprivation and Personality Development"; "Influences of Biological, Psychological, and Social Deprivation upon Learning and Performance"; "Biological Substrates of Development and Behavior"; and "Socialization and Social Structure"—each of the chapters deals with the state of knowledge within a component area, but remains cognizant of the interactive and overlapping nature of all four, artificially determined, component areas. Following the completion of the chapters, and based on the findings contained therein, a 2-day conference was held to determine their implications for research policy and for social action programs. The fifth chapter "Towards a Research Policy for Psychosocial Deprivation," represents a summary of that conference.

As a result of their reviews, the authors of the four chapters are unanimous in urging that high priority and massive support be given to expansion of research in psychosocial deprivation. They stress the necessity for achieving more thorough understanding of the intricate interrelationships of biomedical and social problems in order that national social action programs can be effective and relevant to the populations concerned.

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ACKNOWLEDGEMENTS

The Institute wishes to express its deep appreciation for the dedication, commitment, and efforts of many members of the academic community and the National Institute of Child Health and Human Development Program Planning Committees, who contributed to the conception, design, planning, and production of the manuscript on psychosocial deprivation.

In order to prepare the manuscript, four task forces were established, each representing one of the four component areas of the broad field. The task forces were chaired by two cochairmen who not only managed their task force and wrote papers on segments of their areas of concern, but also prepared the synthesis of all the respective papers as a chapter of the document. The fifth and final chapter deals with the salient issues expressed in a 2-day conference concerned with social policy and action program implications of research on psychosocial deprivation.

Drs. Richard Jessor and Stephen Richardson synthesized the material for chapter I: "Psychosocial Deprivation and Personality Development," based on papers by Drs. Henry Borow, Urie Bronfenbrenner, Bettye M. Caldwell, Stanley Coopersmith, Walter Emmerich, Harold B. Gerard, Bertram H. Raven, Willard W. Hartup, Irwin Katz, Robert Kleck, Lawrence Kohlberg, Walter Mischel, Jerome L. Singer, Daniel Solomon, Alexander Thomas, and Eugene Weinstein.

Drs. James E. Birren and Robert Hess prepared chapter II: "Influences of Biological, Psychological, and Social Depreviations on Learning and Performance," based on their own contributions and those of Drs. Ray Bortner, Carl Eisdorfer, William Fowler, Jacob L. Gewirtz, Arthur Jensen, William Labov, Morton A. Lieberman, Rolf Monge, Klaus F. Riegel, Irving E. Sigel, and Thomas Sticht.

Drs. Bruce Eckland and Donald P. Kent prepared chapter III: "Socialization and Social Structure," which represents a synthesis of their own material and papers prepared by Drs. Richard A. Cloward, Albert Cohen, J. David Colfax, Ronald Corwin, Fred Cottrell, Glen H. Elder, Paul B. Foreman, Juanita M. Kreps, Robert A. Scott, Silvia Sherwood, Arthur Shostak, and Marvin Sussman.

Drs. Donald Lindsley and Austin Riesen synthesized the material for chapter IV: "Biological Substrates of Development and Behavior," based on their own papers as well as those contributed by Drs. Dorothy Eichorn, Seymour Levine, G. E. McClearn, and B. S. Platt.

Dr. Sigmund Dragastin prepared chapter V: "Towards a Research Policy for Psychosocial Deprivation," based on a 2-day conference which included special consultants Drs. Thomas Bennett and M. Brewster Smith; Steering

Committee Members Drs. Jerome Kagan, Ronald Lippitt, William Nyhan, and Edward Zigler and the above-mentioned task force chairmen.

In addition, there were significant contributions to the organization and planning of the document by Drs. Leonard Blackman, Elizabeth M. Boggs, Alfred M. Bongiovanni, James Bosma, Ewald Busse, Robert Canestrari, Jonathan Cole, Samuel Foman, Robert Glaser, Hyman Goldstein, John Hall, Nicholas Hobbs, John Lacey, Arthur Lesser, Morris Lipton, John W. McConnell, James L. McGaugh, Leon S. Otis, Mark Rosenzweig, Sherman Ross, Richard Schiefelbush, Marott Sinex, Lester W. Sontag, George Tarjan, William R. Willard, Marjorie Williams, Mrs. Gladys G. Jenkins, and Mr. William Baxter.

CONTENTS

Page

Preface v

Acknowledgements vii

CHAPTER I.—PSYCHOSOCIAL DEPRIVATION AND PERSONALITY DEVELOPMENT

Overview 1
  Introduction 1
  The Concept of Deprivation 2
  The Differentiation of the Environment 3
  The Scope of the Deprivation Framework 5
Review of Research 8
  Introduction 8
  The Development of Imaginative Capacity in Children and Adults 9
  The Development of Affection and Dependence-Independence Motivation 13
  The Development of Achievement Dispositions 16
  The Development of Self-Esteem 27
  The Development of Moral Values, Ideology, and Personal Controls 31
  The Development of Social Roles 35
  The Development of Interpersonal Competence 40
  Temperament and Behavior in Relation to Psychosocial Deprivation 46
  Stigma as a Factor in Social Interaction 50
  Maternal Deprivation and Lack of Early Stimulation in Infancy 56
  Deprivation in Relation to Social Intervention and the Evaluation of Change Efforts 59
Commentary on Research Reviews and Some Implications for Future Research 63
  Commentary on Research Reviews 63
  Some Implications for Future Research 66
Bibliography 69

CHAPTER II.—INFLUENCES OF BIOLOGICAL, PSYCHOLOGICAL AND SOCIAL DEPRIVATIONS UPON LEARNING AND PERFORMANCE

Concepts of Deprivation and Disadvantage 91
  Models of Deprivation and of its Impact upon Behavior 92
  Subjective Deprivation as a Corollary of Psychosocial Deprivation 99

Page
Review of Current Knowledge 101
SES Differences in Cognitive and Educational Ability 101
Contingency-Learning and Analysis of the Effects of Deprivation upon Learning 112
Linguistic Functioning in Children 117
Deprivation and Linguistic Functioning in Adults 123
The Role of Verbal Mediation in Mental Development 125
Status of Deprived Adults 137
Institutionalization of the Aged: Effects on Behavior 142
Summary of Research Problems and Needs 149
Research Strategies for Improving the Quality of Research on Psychosocial Deprivation 149
Basic Research in the Development of and Change in Cognitive Abilities 151
Basic Research on Language and Language Development 156
Basic Mechanisms of Exchange Between the Environment and Individual Behavior 157
Perspectives on Research Needs 159
Recommendations for Research Priorities 161
Bibliography 162

CHAPTER III.—SOCIALIZATION AND SOCIAL STRUCTURE

Introduction 187
Cultural Relativism and Deprivation 189
The Fallacy of Over-Generalizations 190
Deprived Populations 191
The Culture of Poverty 191
Socialization and Social Stigma 193
Social Change and Social Structure 196
Industrialization and Utilization of Human Resources 196
Fiscal Conservatism and Urban Education 199
The Emergence of Black Separatism 200
Bureaucracy and the Deprived 202
Education: Specialized Versus Comprehensive Goals 204
Summary of Research Issues 207
Research Strategies 211
Implications for Public Policy 213
Bibliography 215

CHAPTER IV.—BIOLOGICAL SUBSTRATES OF DEVELOPMENT AND BEHAVIOR

Page
Growth, Maturation and Development 231
  Introduction 231
  Brain Maturation and Reflex and Behavioral Development 233
  Effect of Enriched Environment on Brain Growth and Brain and Behavior Development 236
  Role of Motor Exercise on Brain and Behavioral Development 238
  Role of Playgrounds, Parks, Gyms, etc., on Incentive to Exercise 238
  Homeostasis and the Role of Regularity of Habits on Brain Function and Behavior 239
Nutrition in Maternal Health and Infant Growth 241
  Protein-Calorie Deficiency Disease 243
  Perinatal Complications and the Environment of the Newborn 245
Genetic Contributions to Biological and Behavioral Development 245
  Introduction 245
  Environmental Variation and Variation in the Genotype 245
  The Problem of Inbreeding in Human Populations 247
  Race and Psychosocial Deprivation 247
  Chromosomal Anomalies in Man 248
  Suggestions for Future Research 248
Neuro-Endocrine Mechanisms in Stimulation of Mother and Infant 249
  Background Information Concerning Regulation of Growth and of Response to Stress by Endocrines 249
  Mother-Infant Interactions 250
  Direct Stimulation of the Infant and Later Development 251
  Suggestions for Future Research 251
Effects of Sensory-Perceptual Deprivation on the Structure and Function of the Nervous System 251
  Patterned Light as a Requirement for Visual Functioning 252
  Neural Metabolism under Stimulation Deprivation 253
  Sensory Stimulation Required for the Development of Fine Structures in the Nervous System 254
  Early Social Deprivation 255
Bibliography 256

CHAPTER V.—TOWARD A RESEARCH POLICY FOR PSYCHOSOCIAL DEPRIVATION

Page
Introduction 273
The Interface Between Research Policy and Social Action 274
The Necessity for an Integrative Perspective 275
The Difficulties of an Integrative Perspective 276
Linkages in Psychosocial Deprivation 278
Personality Development 278
  Overall Perspective 278
  Research Needs 280
  Research Policy 281
  Action Programs and Interventions 281
Learning and Performance 282
  Overall Perspective 282
  Research Needs 282
  Action Programs and Interventions 285
Social Structure and Socialization 285
  Overall Perspectives 285
  Research Needs 287
  Research Policy 290
  Action Programs and Interventions 291
Biological Substrates 292
  Overall Perspectives 292
  Research Needs 293
Conclusion 295

Chapter I

PSYCHOSOCIAL DEPRIVATION AND PERSONALITY DEVELOPMENT

Richard Jessor and Stephen Richardson

Papers Contributed by:

Henry Borow	Antecedents, Concomitants, and Consequences of Task-Oriented Behavior in Youth.
Urie Bronfenbrenner	Effects of Social Intervention on Psychological Development.
Bettye M. Caldwell	The Effects of Psychosocial Deprivation on Human Development in Infancy.
Stanley Coopersmith	Psychosocial Deprivation and the Development of Self-Esteem: Comments and Recommendations.
Walter Emmerich	Social Role Development and Psychosocial Deprivation.
Harold B. Gerard and Bertram H. Raven	Intervention Programs to Overcome Psychosocial Deficits.
Willard W. Hartup	Psychosocial Deprivation and the Development of Affection and Dependence-Independence Motivation.
Irwin Katz	Motivational Factors in the School Performance of Socially Disadvantaged Children.
Robert Kleck	The Role of Stigma as a Factor in Social Interaction.
Lawrence Kohlberg	Moral Effects of Psychosocial Deprivation: Some Research Direction.
Walter Mischel	Psychosocial Deprivation and Self-Control.
Jerome L. Singer	Psychosocial Deprivation and the Development of Imaginative Capacity in Children and Adults.
Daniel Solomon	Psychosocial Deprivation and Achievement Dispositions.
Alexander Thomas	Variation in Temperament as a Factor Generating Psychosocial Deprivation.
Eugene Weinstein	Psychosocial Deprivation and Interpersonal Competence.

Chapter I

PSYCHOSOCIAL DEPRIVATION AND PERSONALITY DEVELOPMENT

PART I: OVERVIEW

Introduction

This paper emerges from concern with the fact that millions of people live out their lives under circumstances which place serious obstacles in the way to attaining the goals of physical health, personal fulfillment, and social accomplishment. Systematic recognition of this fact, and of the responsibility which it must take in relation to it, has come only recently to behavorial science. Because of the recency of such attention, there is available neither a broadly-shared conceptual perspective on the meaning and nature of deprivation, nor a well-established and comprehensive base of empirical knowledge about its consequences.

The 15 papers contributed to our Task Force provide evidence for this state of affairs. They summarize for us what is known in a number of different areas relevant to the Task Force concern; these summaries will constitute the main portion of this paper. At the same time, these papers make clear how large are the gaps in present knowledge, how urgent is the need for vigorous pursuit of additional knowledge, and how little conceptual understanding has as yet been achieved.

The nature or locus of what is meant by deprivation and its effects have often been treated as quite apparent. Reference is usually to fairly clear target populations, members of racial and ethnic minorities, and those at or below the "poverty line" in American society. Involved is the entire quality of life: the poor health, the crowding of ghetto dwellings, the chronic unemployment, the prevalence of broken families, the failure of educational attainment, the feelings of frustration and apathy, the high rates of social problem behavior, and the like. So consistent is the epidemiological concordance of these aspects of life, that efforts at amelioration and large-scale intervention programs have been able to proceed on the basis of what is apparent.

But the concern of the present paper is a somewhat different one, that of assessing the degree of knowledge and understanding which presently obtains with respect to deprivation and its relation to personality development. For such understanding there is little which can be taken as readily given. An adequate explanatory account needs to be able to encompass facts which depart from what is generally apparent: the fact that the effects of being poor have not been everywhere and always the same; the fact that some impoverished black ghetto residents are apathetic while others are militant;

the fact that deprivation for some is associated with mental illness, for others it eventuates in crime and delinquency, and, surprisingly, for some others in maturity, responsibility and leadership. What is called for, obviously, is comprehensive theory which can specify relevant variables, delineate the nature of their interaction, and yield analytic understanding. We are still a good distance from such a goal, as the contributed papers frequently note, but there are a few recurrent issues attention to which in the future might help bring us a step or two closer. It may be worthwhile commenting on these briefly before turning to the substance of the contributed papers.

The Concept of Deprivation

The first issue has to do with the appropriateness and generality of the deprivation metaphor. That it has been a less than satisfactory guide to both conceptual and empirical efforts is clear in the various papers of the different Task Forces and in the lengthy and troubled discourse during the planning which preceded their solicitation. The term has historical priority from the important initiating work on "maternal deprivation" and, subsequently, "sensory deprivation." It has ready connotative significance in that certain aspects of disadvantage can clearly be seen to involve some kind of lack or insufficiency, for example, a lack of access to opportunity, or an insufficient exposure to abstractions in communication patterns in the family. And it has denotative reference where standards of sufficiency can be specified in some degree as, for example, in unemployment, in nutritional requirements, and perhaps even in the amount of linguistic experience required for adequate school performance. For these reasons, and because it poignantly catches the essential significance of disadvantage, the deprivation metaphor has been useful and has had wide currency. Yet its limitations for contributing to analytic understanding are several and serious.

First, norms or criteria for sufficiency are neither available nor established, especially where psychologically defined variables are concerned. For most of the parameters which can be specified in different life situations, we simply have no understanding of threshold values below which insufficiency can be defined. The notion of deprivation becomes, under such circumstances, merely a gratuitous rephrasing of the notion of environmental variation.

Second, it seems clear that the conditions of disadvantage can often be characterized just as significantly by the *excess* of certain kinds of stimulation or environmental attributes as by the absence or limitation of others. To be disadvantaged or deprived is to be exposed, for example, to an excess of stigmatizing experiences, an excess of deviant role models, an excess of persons per unit of living space, an excess of failure in school, etc. In short, the nature of disadvantage requires a conceptualization not only of what is limited or lacking, but also of what can be interpreted as excessive. Both conditions may, in addition, be present simultaneously in a given situation.

Third, the deprivation metaphor is, to some extent, logically misleading in that it suggests that the explanation of the phenomena of disadvantage lies in what is absent rather than in what is present. To speak, for example, of maternal deprivation as an explanation is to attempt to account for certain characteristics of infant development by the absence of the mother rather than by the presence of some specifiable set of environmental conditions. While mother absence may be a useful and convenient way to summarize or symbolize the conditions which will likely be present, the important point is that development is likely to be invariant with or related to the conditions which are present, not with those which are absent.

Implied in the preceding point is the further fact that insufficiency or absence of a particular attribute may have quite different implications depending upon the overall pattern of attributes which are present. Thus, father absence is likely to have quite different implications depending on whether there are other adult male role models in the home or not; limited affectional interaction between mother and child is likely to have quite different implications depending on whether discipline is harsh or easygoing.

In view of these problems, it would seem wise to abandon the term "deprivation" as a general explanatory concept, while reserving it for application where the requirements for a deprivation paradigm obviously obtain, that is, where one can specify the paucity or absence of a given experience. Those target populations commonly characterized as deprived are better described as disadvantaged, a term which makes no commitment to an insufficiency model. What is then needed to replace the explanatory contribution of the deprivation term is the refined and careful study of variation, variation in those attributes which are characteristic of and present in the environments of disadvantaged populations or statuses, and variation in their outcomes.

The Differentiation of the Environment

The second general issue of recurrent concern to the authors of the Task Force papers follows from the foregoing considerations. Once attention is focused upon the conditions of disadvantage, it becomes clear that a major—perhaps the fundamentally critical—obstacle to analytic understanding is the lack of a systematic theory of the psychosocial environment. Caldwell notes that we have been content with only the grossest of indices of environmental influence; Monge refers to the lack of precision in the definition of environmental variables in general; and Lieberman comments that current knowledge for describing institutional environments is poorly developed. The general issue is addressed also by Fowler in the following remarks: "Too often the significant background variables in studies of disadvantaged children * * * include essentially gross measures such as social class, race, occupation, father absence and the like, which furnish little potent information on the specific stimulus history of the child." He emphasizes the need to identitfy and classify the gamut of psychologically functional dimensions and types of disadvantage, and urges "* * * systematic and detailed exploration of the presence, intensity and arrangement of specific stimulation patterns in the home, neighborhood, peers, and all major circumstances in the children's lives."

Comments such as these, of which those cited are merely illustrative, plus the uncertainty of the authors about what aspects of the environment to focus upon in their discussions, reveal how conceptually undeveloped is present environmental analysis. The usual accommodation to this state of affairs, the reliance upon such descriptive categories as race and class, while useful for locating target populations and organizing intervention programs, does not contribute to analytic understanding.

The latter aim will in all likelihood be furthered when environmental analyses in experience-relevant, or psychologically relevant, or functional terms are more advanced. Toward this end, certain distinctions would seem to be important, distinctions which make clear that the environment is best treated as problematic rather than taken as self-evident, as multi-faceted rather than homogeneous, as varying rather than static, as having depth rather than only surface, and as being extended over time rather than being cross-sectional.

Perhaps the distinction most crucial to the disciplines jointly involved in the present enterprise is that between what might be called the distal environment and the proximal environment. This distinction refers to a dimension of environmental analysis ranging from the (proximal) immediate, *psychologically defined* context of functional stimulation, to the more remote (distal) description expressed in non-psychological language systems. What many of the authors are referring to as "crude" or "gross" environmental variables, e.g., social class, are more properly considered as distal variables, variables whose relationship to behavior must be considered to be mediated by proximal variables. Thus, race or socioeconomic status or biological defect or population density or educational bureaucracy are environmental descriptions relatively remote from direct psychological or experiential significance. That they have implications for the latter is quite clearly true—that is why they have often been used as relatively effective independent variables. But their implications can only be taken to be probabilistic in nature: to be Negro in the United States, involves a high probability of being exposed to a stigmatizing interpersonal environment. The crucial point is that behavior and development are invariant with the latter, the proximal environment of stigmatizing stimuli, rather than with the former, the distal environment of being a Negro.

There are several implications which follow from this discussion of proximal and distal environments. First, an articulated *explanatory* account of behavior and development ultimately requires a proximal level of environmental analysis. No amount or degree of correlation between such distal variables as social class, economic status, minority group membership, or skin color, on the one hand, and personal or behavioral attributes on the other hand, can serve as substitute. Second, where correlations between distal variables and personality or behavior are strong and consistent, the distal variables need to be seen as probabilistically implicating a set of proximal, environmental variables. Thus, lower class life or minority group status should be seen, in this way, to be elliptical designations for bundles of proximal environmental attributes.

The several behavioral science disciplines tend to focus at different locations on the proximal-distal dimension, with psychology traditionally (but not exclusively) more concerned with proximal variables and sociology and anthropology with distal variables although, again, not exclusively. At the level of comprehensive explanation of social behavior, the need would seem to be for a theory of environment which encompassed the totality of these variables and which specified the structure of relations among them. While such a theory of the environment would advance behavioral science as a whole, its pursuit would seem to be a task of utmost urgency if there is to be understanding of the nature of psychosocial deprivation in particular.

The Scope of the Deprivation Framework

A third general issue of relevance to the Task Force papers has to do with the scope of the explanatory framework within which psychosocial deprivation or disadvantage is to be embedded. Again, because of traditional interests or disciplinary concerns, research paradigms have tended to deal with only selected portions of the total system. Yet it can be argued that understanding and explanation are advanced as the different regions of conceptual concern are systematically linked with each other. From the point of view of the overall Task Force objective, it may be useful to illustrate the component aspects of a comprehensive explanatory "model." Such a model can be useful in "locating" particular kinds of research findings and in helping to make apparent those types of research which need to be done. It can also help to make clear where the foci of the papers of the different Task Forces lie.

The primary conceptual regions of such a model are the environment, the person, and behavior. In the schema on the following page, an effort is made to illustrate these regions in a theoretically neutral way, making use of conventional descriptive categories; particular theoretical predilections would, of course, lead to the specification of particular variables whose properties would imply particular kinds of relationships.

Several comments should be made about the schema. First, the variables within a column cannot be considered to be independent of each other; as

Illustrative Schema for Psychosocial Deprivation and Development[1]

Environment attributes		*Person attributes*	*Behavior attributes*[2]	
A *Distal*	*B* *Proximal*	*C*	*D* *Proximal*	*E* *Distal*
Race	Social evaluation reactions	Skills	Reading deficiency	School Failure.
Social Class	Parental teaching modes	Beliefs	Agressiveness	Delinquency.
Ethnic Status	Affectional climate	Motives	Withdrawal-isolation	Psychopathology.
Institutional Structures.	Discipline-control practices	Attitudes	Discrimination	Inter-group hostility.
Biological Defect	Exposure to peer models	Interests	Striving	Successful Role Performance.
Urban Ecology	Teacher expectations	Identities		
Etc	Etc	Etc	Etc	Etc.
(Negro →	Chronic negative evaluations (stigma) →	Low self-esteem →	Failure to strive →	School dropout.)

---

[1] The items within each column are arbitrarily arranged. Further, the items on any row across the columns are also arbitrary, that is, there is no intention to suggest point-for-point relations across rows, Each column, in short, is a "box of variables," relations among and between which must be empirically established.

[2] The distinction between proximal and distal under Behavior Attributes is not elaborated in the text. Its logic is the same as that attempted for the environment. Proximal behavior is described in psychological terms, while distal behavior implies social or institutional description, social processing, or social categorization.

a matter of fact, one of the important research tasks is the identification of the pattern of their relationships under different conditions. Second, a variable in one column may have implications for several variables in another column. Third, while there is a directional implication in the schema, running from left to right and giving priority to the environment, the regions should, over time, be seen as parts of an interdependent system generating complex feedback effects. Finally, the dual role of the environment should be noted: over time, it leads, through socialization and learning, to certain person attributes; at any given time, it interacts with those attributes to generate behavior.

Research and theory have proceeded with concentration at different locations in the schema, concentrations reflecting traditional disciplinary interests. Sociologists have been mainly interested in relations among variables in the distal environment (col. A), and in relations between those variables and distal behavior (col. A and col. E); social and developmental psychology have focused largely on relations between the proximal environment and either person outcomes or behavior outcomes (col. B with col. C or D or E); personality-clinical psychology has focused largely on relations within column C, and between it and behavior (C and D or E), although it is increasingly becoming concerned with the proximal environment.

The main purpose in introducing the schema is to make clear that comprehensive understanding of psychosocial deprivation will ultimately require knowledge of *all* the regions in the schema and of their inter and intra-relations over time.[1] Only when there is understanding of how being a Negro implies a particular proximal environment or psychological ecology, and how that environment leads, over time, to particular person outcomes which ultimately eventuate in particular deficits in performance, and only when theoretical rather than descriptive variables have been specified for each region, will it be possible to claim a comprehensive explanation of psychosocial deprivation.

We have, thus far, raised three general issues involved in the approach to achieving understanding of psychosocial deprivation. These are only a few of the possible problematic concerns, but they help to emphasize the point that explanation is a theoretical matter as well as an empirical one. Our views that the deprivation model has serious limitations in accounting for the phenomena of disadvantage; that the most critical problem we face is the attainment of a differentiated theory of the environment; and that comprehensive understanding will ultimately require articulated linkages between environment, person, and behavior, can serve as an introductory framework for the substantive papers considered below.

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[1] For one example of an attempt at a comprehensive theoretical scheme and research paradigm, dealing with deviant behavior, see: Jessor, R., Graves, T. D., Hanson, R. C., and Jessor, Shirley, L. *Society, Personality, and Deviant Behavior: A Study of a Tri-Ethnic Community*. New York: Holt, Rinehart and Winston, 1968.

PART II.—REVIEW OF RESEARCH [2]

Introduction

The objective given this Task Force was to survey the state of knowledge about psychosocial deprivation in relation to social and emotional development. Since this domain was not clearly designated, and since a wide range of subject matter could be involved, we decided to emphasize what traditionally constitutes the subject matter of personality and to exclude what are usually considered as intellective or verbal-linguistic attributes. The difference is one often expressed in the distinction between motivation and cognition, or between emotion and intellect. It should be recognized that this is a relatively arbitrary and sometimes difficult distinction to draw. For example, the motivation to do well in school is as much a "cognitive" matter as is skill with verbal abstractions. Further arbitrariness was introduced by the way in which social-emotional or personality development was partitioned. We selected topics or variables which seemed important mediators of social behavior, which seemed likely to reflect variation in environmental exposure, and on which some degree of empirical work had been accomplished. The topics, then, in no sense exhaust our domain nor do they constitute a particular, systematic partitioning of it. Rather, they should be taken mainly as marking certain significant regions within it.

An additional point should be emphasized here. The topics or variables selected for attention were in the main seen as relatively enduring attributes of the person—dispositions, orientations, skills, beliefs, values—reflecting the outcome of his past experience, learning, and socialization. They refer to the person, and not to the environment nor to behavior. As person attributes, they interact with the environment to eventuate in behavior. The difference between these person attributes and *actual behavior* cannot be stressed too strongly. The same behavior or performance may emerge from widely different person attributes, and the same person attribute may lead to widely different behaviors in different situations. Thus, school failure may, for one child, reflect low verbal skill, for another low self-esteem, and for a third hostility toward parents. Likewise, low self-esteem may, for one child, lead to withdrawal and for another to aggression. Retaining the conceptual separation of person attributes from behavior, and conceiving of these attributes as somewhat enduring or characteristic rather than transient, places these variables in precisely the mediating position between environment and behavior which they should occupy.

Finally, the general assumption adopted in most of this review is that the individuals considered are functionally intact, normatively developing biological organisms. This oversimplification permits undisturbed attention to be given to the social environment, to person attributes, and to behavior. With respect to this assumption, it should remain clear that the differential effects of various environmental factors on disadvantaged persons cannot be understood by an exclusive consideration of social and psychological factors. Attention must ultimately be paid also to differences in physical health, functional impairment, and temperament. The attempt to systematically explore biosocial interaction in development and deprivation is a major task which, however, was not included in this review.

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[2] The material in this section is composed largely of extracts and major verbatim sections of the papers commissioned for this Task Force. The editors have removed some of the redundancy between papers and have omitted sections in order to shorten the presentation. Reference to the full papers is made by subject matter, and it is hoped the original papers will be read in order that full justice can be given to their content.

The Development of Imaginative Capacity in Children and Adults

Whether regarded as simply a useful defense against anxiety, or a temporary relief from the pressure of strong impulses, or viewed more broadly as a cognitive skill which has a number of important adaptive functions, the child's or adult's capacity to engage in fantasy behavior, whether in play or in imagery, remains a most important feature of normal development. By developing a flexible ability to attend to his own stream of thought or to play with a variety of "experimental actions" (Freud, 1962) mentally, a person may see unusual creative possibilities (Kris, 1952), may help while away periods of waiting or monotony without engaging in impulsive action (Singer, 1966), may practice mentally a variety of alternative behaviorial patterns, or carry on a sequence of complex planning activities which greatly increase his behaviorial possibilities, or may simply escape in fantasy temporarily from the pressure of a distressing situation which if responded to directly, might eventuate in acts later regretted or socially undesirable. Thus imaginative capacity would seem to have both socially and personally adaptive implications.

In current views of development, the child is regarded as possessing a fundamental capacity for exploration of novel environments with a concomitant tendency to assimilate new information into its limited set of cognitive schemes (Piaget, 1951; Singer, 1966). The resulting pattern of information processing frequently (from the adult standpoint) leads to bizarre or curious combinatory structures which are intriguing in their own right and form the basis for imagination and highly personalized thought (Schachtel, 1959; Singer, 1966). Many of these patterns are eventually modified to conform to consensually valid behavior, language, or cognitive patterns as part of normal socialization; but many of the early more unusual transformations persist as separate schemes and emerge in reverie, dreams, or under circumstances where an adult assumes a playful or fanciful attitude (Tomkins, 1962, 1963; Breger, 1967; Singer, 1966.) In addition, the imaginative play of the child provides it with an opportunity to exercise certain verbal and imagery skills and to develop additional capacities for self-entertainment as well as for relieving fears or blocked impulses.

Studies using either measures of imagination and daydreaming or introspection derived from interview, questionnaire, or Rorschach M responses and related measures, generally concur in supporting the position that fantasy capacity in general represents an important human characteristic adaptive in a variety of ways. For example, persons who improve in psychotherapy show increased imagination while violent criminals or assaultive mental patients, antisocial middle-class adolescents or other groups of adults or children who show signs of serious difficulties or disturbing impulsive behavior or restlessness, generally manifest a paucity of development in the area of imagination.

In approaching the question of the effects of psychosocial deprivation on the development of the capacity to employ imagination productively, it is first necessary to examine what is known of the origins of fantasy play. The following is a summary of the factors which can be delineated from research and clinical literature as relevant to the conditions conducive to development of imaginativeness in play and later adult life.

Constitutional or congenital factors such as a minimal level of intelligence, absence of gross brain damage, moderate capacity for activation so that normal exploratory and manipulative behavior is present, are all clearly relevant for fantasy to develop. There is as yet no evidence of marked constitutional factors in degree of fantasy play, but it is clear that some children show a predilection for more organized, extended sequences of play by the age of 2 years. Fantasy play seems most likely to depend on interaction with a variety of physical objects and toys, as well as with meaningful contacts with adults. The child early attempts to explore his physical environment and make sense of it and also to accommodate to the demands of patterns of adults, e.g., the mother's smiles, affective reactions, and verbalizations. Left alone, he attempts to reconstitute these objects or remembered reactions, but can deal with this material only in limited ways. With practice and time for solitary play, the child works out organized sequences of play that incorporate material from interactions with the environment, adults, TV, and children's records, into a new set of play schemes which sustain interest and provide joy in their own right. There is evidence from a number of studies that fantasy play and the capacity to engage in daydreaming or solitary pleasures is enhanced through extended contact with at least one benign, adult, generally the mother or any adult who provides consistent attention, frequent verbal interaction, and who actually reads or tells stories to the child, or even engages briefly in some imaginative play also (Singer, 1966).

Some opportunities for solitary play or for privacy seem important, especially since the integration of imaginative materials requires some extended time and repetition of relatively long sequences of cognitive structures, e.g., the development of a fantasy "story-line." There is evidence that first-born or only children, or children with relatively few siblings, are more likely to have the time and privacy for practice and the greater contact with adults to permit fulsome development of fantasy play (Singer, 1966; Sutton-Smith and Rosenberg, 1968). The kaleidoscopic nature of large peer group play structures often impedes development of imaginative play since there are frequent changes in group direction and shifts in such games, except for those of the more *immediate* type, such as, formal sports, gambling games, or variants, or "tag" and "hide and seek" games.

At later ages, cultural factors supportive or critical of imaginative behavior may become critical. Early studies (Singer and Opler, 1956) have suggested, for example, that cultural factors may yield striking differences in the tolerance of fantasy, as evident in the greater imaginativeness of Irish subjects compared with Italian subjects, and the heavier emphasis on motoric behavior of the latter group. A similar contrast was observed in Jewish and Italian children by Strodtbeck (1958). On the other hand, more recent evidence indicates that subjects of Negro, Jewish, or Italian cultural background, who have attained middle-class status, are more likely to be freer in imaginative expression than persons of Anglo-Saxon cultural heritage (Singer, 1966). It seems likely that parental tolerance and encouragement of imaginative play and related activities, such as, reading, drawing, dramatic play (e.g., putting on of playlets for neighborhood younger children), all are critical factors in enhancing integration of this development. Also, there is evidence that children show strong predisposition for fantasy play or imagination by school age, and that this persists and becomes solidified by early adolescence (Pulaski, 1968; Gottlieb, 1968). Such play is modifiable by observation of adult models so that even school age children can increase the span of fantasy play after contact with encouraging adult models or teachers (Bandura and Walters, 1963; Gottlieb, 1968; Marshall and Hahn, 1967). Varied and interesting toys or the opportunity for complex sensory interaction with varied environments, followed by opportunity for private assimilation of this material, also seem critical in increasing the richness and flexibility of imaginative development (Pulaski, 1968; Singer and Streiner, 1966; Singer, 1966). While there is, as yet, little evidence about the effects of television, it seems quite likely from observations that children from otherwise culturally impoverished or minimally literate backgrounds are being increasingly exposed to a great variety of material hitherto inaccessible to children whose parents did not engage in reading or actual travel. The effects of television viewing must unquestionably stimulate children and lead to the incorporation of such material into their play. If, however, such viewing is the chief outlet for imagination, with little opportunity for fantasy play so that fantasy skills can be incorporated through practice, the TV viewing may become a source of aroused interests and desires, but not of actual skill and the development of a varied imaginative repertory.

It should be clear from the presentation to this point that certain factors characteristic of the cultural milieu of poor persons or of ethnic or sociocultural minorities, limited in educational and broader interaction opportunities, may play a role in failures to develop satisfactory capacities for imaginative play in children or imaginative thought in adults. The consequences of such failure may lead to the tendency of children to seek direct gratification by petty violence, thievery, or early sexual promiscuity, since they have relatively few alternatives for self-amusement or very little foundation in imagination for the later development of broader cultural interests. Similarly, in the absence of much practice at imaginary rehearsal, they are less likely to perceive fully the consequences of various behavior patterns or to show an ability to plan and sustain their behavior so that they are not readily distracted from major goals by temporary gratifications. That such effects of conditions of life associated with lower socioeconomic status are indeed observable in children and adults have been reported in various studies of imaginative performance by Korchin, Mitchell, and Meltzoff (1950), Downing et al. (1965), and Ames (1966). There are some indications that father absence from families, which leads to limiting the availability of the mother in the nurturant, close confidante, or storytelling role conducive to fantasy development, also affects observed capacity to delay gratification or to generate imaginative responses (Singer, 1966; Campos, 1963).

Indeed, by contrast there is considerable evidence for the fact that family patterns do establish role models for children. Where crowded conditions prevail, where parents are less likely to have time, education, or cultural background to provide children with examples of the use of imaginative techniques, storytelling, or reading, it seems likely that a serious deficit will exist in the development of imaginative potentail. While a simple cathartic relation of aggressive drive to fantasy expressions of hostility is no longer a satisfactory formulation, it is amply clear that outlets for exploration, curiosity, mastery, and other forms of expression can take alternative routes, if a well-developed daydream or fantasy play capacity exists. Similarly, imagination forms an important basis for relating to many of the materials presented in schools and for the increased development of broader interests and skills that enhance verbal expression. Failure of parental models to present such opportunities may seriously handicap children for many years, if not permanently.

To summarize, there is considerable evidence that children and adults who show relatively little capacity for imaginative production on psychological tests, or in interview data, also show tendencies for inadequate planning ability, poor ability to delay reactions for temporary gratification to obtain longer term rewards, impulsive expression of anger, aggression, motor restlessness, and other forms of behavior, with negative consequences for themselves or others. There is also evidence that the necessary ingredients for development of adequate imaginative behavior stem from: early family experiences which involves closeness with at least one parent who offers a model of affection, interest, considerable verbal interaction, and who tolerates and indulges in imaginative behavior; a cultural milieu which accepts such fantasy behavior as normal or even desirable; opportunities for privacy or freedom from extensive peer group intrusion or distraction so that fantasy skills can be developed; and, ultimately, opportunities through reading or schoolwork to obtain additional content and models for imagination or for consensual validation of a variety of inner experiences.

Studies of persons from lower socioeconomic status families and, more recently, studies of Negro and Puerto Rican families, suggest that such factors as crowded conditions of life, absence of fathers which limits availability of mothers for playful activities, family emphasis on maintenance of order rather than on task orientation, lack of interest in reading or storytelling to children, limited privacy in large families, extensive dependence on peer group rather than parent-child interaction for stimulation, all impede development of a variety of cognitive functions, including the development of daydreaming as a skill. It would therefore appear that one serious handicap of the combination of poverty (or enforced urban ghetto status) with certain limitations of education, may be to prevent satisfactory development of the imaginative resources which can serve as a valuable alternative to impulsive action, poor planning, antisocial behavior, or extreme motor restlessness.

In conclusion, there is considerable evidence that man has in his dreams, daydreams, and general stream of thought, a valuable resource for planning, control of mood or impulse, self-entertainment, defense against anxiety, ability to help time pass more swiftly during long waits, or for various creative functions. There are also indications that certain characteristics of family experience are especially conducive to man's development of effective use of these inner resources. While there are some suggestions from research that children from culturally deprived or poor backgrounds are afforded less opportunity for full development of the capacity to use imagination, the fundamental research in this area remains to be carried out. Only when that is done will we be able to speak with confidence of the possibility for man's fullest use of his inner cognitive resources.

The Development of Affection and Dependence-Independence Motivation

Affection and dependency are among the most important aspects of personality development in childhood. Dependency refers to the seeking of help or emotional support and does not refer to a pathological condition except when children are unusually incapable of functioning self-reliantly. The development of normal dependency, during infancy and early childhood, is recognized by psychologists as one of the key prerequisites to adequate personality development and social functioning. Unless children first give indication that contact with other people, the approval of other persons, and the attention of others are meaningful to them, it is unlikely that they will be responsive to the efforts of parents and teachers to inculcate higher level skills and moral strictures. Indeed, the absence of motivation for affiliative contact during early childhood is a more severe sign of social deviance in children than is the absence of a desire to be self-reliant and socially assertive. Just as dependence and social attachments form the "glue" for human personality development, these motives also supply the cohesive elements for all orderly social institutions. Unless contact with, and recognition by, people are important to the individual, organized society cannot exist.

The foregoing distinctions are significant ones because too frequently dependency is regarded as an undesirable characteristic. It is true that children are expected to change the *mode* of expressing their affiliative needs (from clinging in babyhood to recognition seeking during the school years) and, to some extent, the *objects* of these needs (from sole focus on the mother to a more generalized focus on other family members and peers). But dependency is a vital aspect of normal development in children; it is, therefore, a greater social problem in its absence than when present in excesesive amounts.

The conditions necessary for the development of early attachments, as best we know them, include contact with an adult(s) who provides sensory stimulation to the child, who is responsive to the infant's needs, and who provides this responsiveness with some regularity in relation to the child's own overtures. Parental neglect—either in the form of too little stimulation or stimulation that is not contingent with respect to the child's own actions—has been quite consistently indicated as an antecedent of weak development of the affectional system in young children. It is probably not of crucial importance whether a mother or a mother surrogate provides the stimulation. Rather, it is the *lack of appropriate stimulation*—ordinarily given the child through talking to him, touching him and cuddling him, when he is awake and receptive to this stimulation—which is crucial.

During later childhood, affectional behavoir must be extended to include age mates. Research is quite clear in showing that older children who are largely dependent on adults have less effective relations with peers, have lower status in the peer group, and are less likely to exert constructive influence with peers than are children who center some of their affection seeking on age mates. Since successful peer relations are concomitant with academic success, low incidence of school dropout, and good emotional adjustment at later ages, we can propose that early focusing on peers for dependency gratification has a beneficient effect on later emotional development.

The methods the child uses to gain affectional attention ordinarily undergo change, over time, from direct seeking of physical affection to the seeking of recognition and approval. Most parents accomplish this shift with little difficulty, probably by reducing the frequency with which they reward infantile clinging and increasing the frequency with which they reward more mature ways of gaining affection and approval (such as showing skill and achievement). Early independence training, which research has indicated is an important precursor of achievement motivation, thus is ordinarily applied after the child has had an opportunity to develop strong affectional ties.

Dependency and independence training in healthy development are not mutually exclusive. The social world must continue—throughout life—to reinforce the individual's affiliative overtures. But this is done for mature forms of dependency and overtures not exclusively focused on the parent. There is a kind of substrate of dependence, then, that underlies social intercourse at all ages. The years from 2 to 6 are the years for both cementing earlier attachments and learning to stand on one's own feet.

Research directly linking the various conditions of psychosocial deprivation and dependence-independence after infancy is almost totally lacking. Conditions of social isolation, cruelty, and neglect, on the one hand, or overwhelming but undifferentiated stimulation (too much stimulation in too little space, too many caretakers, too little opportunity to relate in depth to other people) should, according to the above description of affiliation development, have profound effects on the emotional development of the deprived child.

Research on child-rearing techniques, covering some six studies conducted with children and adolescents, has confirmed the fact the *parental rejection* leads to high dependence on adults. Subjects in these studies have included "normal" grade school children and samples of "high risk" children studied by means of case records. Other research has suggested that rejection and failure to accede to the child's dependent overtures during the early years is associated with high anxiety concerning the expression of normal affection and help-seeking in adolescents, and to high incidence of delinquent aggression as well. Of all the parental attitudes studied in relation to children's dependence, rejection stands out as the one dimension in parental behavior that leads to maladaptively high levels of dependence on adults and to anxiety in interpersonal relations in later childhood. We can infer, then, that conditions of neglect and cruelty (recognized as aspects of psychosocial deprivation) probably act to interfere with affectional development by prolonging dependence on adults, and that these affectional problems may well be linked with high incidence of antisocial activity.

Present research on parental absence from the home is increasingly clear in suggesting that father absence has an impact on affectional development in both boys and girls. Again, research populations have not included the economically deprived, *per se*. This is the major gap in this area. But recent studies with both white and Negro children point to the following conclusions: When a father leaves the home (for whatever reason) before a male child is 4 years of age, that child, at age 9, is likely to be more dependent, less aggressive, less adequate in peer relations, less masculine and less competitive in games than boys whose fathers are present in the home continuously or whose fathers are absent after the child has reached the age of 6. Thus, it is *early* absence which maintains prolonged dependence on adults and interferes with adequate sex typing in boys. For girls, father absence appears to lead to inappropriate interpersonal attitudes (particularly toward men) when fathers are absent in preadolescence. Once again, generalizations to the economically deprived family must be made with caution and only apply to the extent that broken homes (and children almost always experience father absence rather than mother absence) are found more often among the economically deprived.

Patterns of social interaction in the psychosocially deprived family have also been studied. Recent evidence, for example, suggests that families in which the mother is dominant in decisionmaking and in childrearing, produce sons who are less masculine and who are less likely to imitate male figures than are families with dominant fathers. Father-dominant families, on the other hand, do not appear to affect deleteriously the behavior of girls. In many economically deprived homes, the mother is a dominant figure. This feature of the psychological atmosphere of the deprived home thus may have important influences on the development of children—particularly males.

Affiliation with peers in childhood and adolescence may be damaged by such factors as: a) membership in the lower socioeconomic classes; b) membership in a minority racial group; c) low intelligence; d) deficient physical skills; e) poor emotional adjustment; f) low self-esteem; and g) possession of deviant social values. One cannot say that any one of these factors *causes* difficulty in interpersonal relations with peers. It is clear, however, that these factors co-vary in children's social functioning. Consequently, conditions serving to deprive a child by virtue of his class, ethnic, or personal status damage his reputation in the eyes of his age mates. This is an important aspect of the problem of stigma.

The Development of Achievement Dispositions

The term, "achievement dispositions" is intended to refer, broadly, to various kinds of orientations and behavioral tendencies which might be expected to be relevant to achievement, including motives, values, aspirations, beliefs about abilities and potentialities, and striving behavior in achievement-relevant situations. Knowledge about these nonintellectual determinants of achievement will be organized around a small set of variables which have received sufficient research attention to enable some generalizations to be made.

1. *Need for Achievement*

The most extensively studied achievement-related motivational disposition has been the "*need for achievement*" (McClelland et al., 1953; Atkinson and Feather, 1966) defined as a tendency to strive for success when one's performance is evaluated against a standard of excellence. This motive, measured usually in fantasy productions, has been found to be positively related to socioeconomic status among children, adolescents, and adults (Cameron and Storm, 1965; Bruckman, 1966; Douvan, 1956; Rosen, 1956, 1959, 1961; Nuttall, 1964; and Veroff et al., 1960). A few studies have also been done comparing the need for achievement of Negroes and whites in the United States. Higher scores have been reported for low-status whites than Negro children, adolescents, and adults (Mussen, 1953; Rosen, 1959; Lott and Lott, 1963; Mingione, 1965). Upper status Negro boys scored higher than upper status whites in the Rosen study, however.

While numerous studies have shown such parent behavior variables as warmth, equalitarianism, and permissiveness to be positively related to social status, only a few have related these variables to need for achievement. Thus Winterbottom (1958) found that mothers of boys high in need for achievement, reported giving intense rewards and emphasizing early development of independence and mastery in their children. When the same subjects were retested in adolescence, 6 years later (Feld 1967), the correlations between the early mother reports and need for achievement were no longer significant, although there was a strong negative relationship between mothers' early encouragement of independent accomplishment and adolescent test anxiety. Rosen and D'Andrade (1959) found boys with the highest measured need for achievement to have fathers who tended to grant them autonomy and mothers who stressed achievement more directly and with more involvement. Dominating fathers tended to have sons who were relatively low on need for achievement. This finding was corroborated by Bradburn (1963), who also found that in Turkey, where the typical paternal role is a very dominant one, boys with the highest need for achievement scores had been removed from their fathers' influence by the age of 14. In contrast, Veroff et al. (1960) found that boys in the United States who had lost either parent through divorce or separation before the age of 16 tended to have low need for achievement scores. Bradburn explains the discrepancy as reflecting a difference in culturally defined parental roles, but with a similar underlying causal process. Rosen (1961) found such family characteristics as family size and mother's age to have important direct effects and interactions with birth order and social class to influence the need for achievement.

There are a good many difficulties with the concept of a global achievement motive as embodied in the fantasy-based measure, which have recently been reviewed by Smith (1968). As Smith puts it:

> There are questions about its generality * * * its openness to influence that contaminate its value as a measure of motivation. The findings in regard to its relationships to achievement-oriented behavior have been ambiguous * * * Given this less than encouraging record, one suspects that there has been slippage between the theoretical definition of the motive and what has actually been captured in the measurements.

The problem of the generality of the achievement motive is especially relevant to the study of class and cultural differences in academic performance. For example, the lower class Negro pupil's disinterest in classroom learning may be less a matter of his lacking the achievement motive than of its being directed into nonintellectual pursuits. One may note that two decades of need achievement research have produced very little evidence that Negro children are lower on need achievement than white children; apparently only two relatively small sample studies have been published, Rosen's (1959) and Mingione's (1965). In comparing the behavior of individuals from different social backgrounds, it may be necessary to abandon entirely the concept of a *single global achievement* motive in favor of a notion of many relatively independent achievement motives that are specific to particular areas of competition.

2. *Internal Versus External Control*

A predisposition which is strongly associated with scholastic achievement, though the nature of the causal relationship has not been empirically unraveled, is Rotter's (Rotter et al., 1962) *sense of personal or internal control of the environment.* Individuals differ in the extent to which they feel they can extract material and social benefits from the environment through their own efforts. In its broadest meaning, this construct refers to the degree to which people have a sense of efficacy, or power, and accept personal responsibility for what happens to them. It has been applied more specifically to children in intellectual achievement situations by means of a questionnaire which assesses the extent to which favorable reactions from parents, teachers, and peers are believed by the child to depend either upon the quality of his own efforts or upon extraneous factors (such as luck, or the personal bias or whim of the evaluator) (Crandall et al., 1965). The sense of internal control has been found to be stronger in white children and adults than in Negroes, and stronger in the middle class than in the working class (Battle and Rotter, 1963; Crandall et al., 1965; Coleman et al., 1966).

A similar variable, "fate control" was found by Pettigrew (1964, p. 20) to be negatively related to father absence among Negro males. Intellectual achievement responsibility has been found to be positively associated with various indices of parental warmth, and negatively associated with parental dominance and rejection (Katkovsky, Crandall and Good, 1967).

A child's feelings about whether his own efforts determine his external rewards clearly should affect his expectancy of success, hence his willingness to strive. His level of performance should in turn affect the rate at which the environment dispenses rewards, hence his sense of internal control. Thus Crandall and others (1962) found that white grade school boys who felt they controlled their reinforcements got high scores on intellectual tests and engaged in much intellectual free-play behavior. Similarly, in their nationwide survey of public school students, Coleman and his coworkers (1966) found internality related to academic achievement in both whites and Negroes.

The Coleman team measured three types of student attitude relevant to academic motivation: interest in school work, self-concept as regards ability, and sense of control of own rewards. For Negro students, sense of control was clearly the most important attitude, contributing at different grades from two to several times as much to the accounted for variance of verbal achievement as either of the others. Moreover, the relation of Negroes' sense of control to achievement was considerably stronger than that of any family background factor. Finally, comparing races reveals that among older children sense of fate control accounted for about three times as much test variance among Negroes as among whites.

Since the Coleman findings represent merely empirical correlations, the causal connections between sense of internal control and other variables can only be surmised. Nonetheless, there are strong suggestions in the data regarding the relative importance of home and school determinants. The Report indicates that for Negroes sense of control was little influenced by home factors or objective school characteristics, but one factor apparently affected it strongly: as the proportion of white students in school enrollments increased, Negroes' sense of internality grew stronger.

From a recent report by Gurin (1968), we learn that measures of internality taken on adolescent job trainees (mostly Negroes) prior to completion of the training program and again after being out of jobs for a while were both significantly related to job success. But the latter correlation was higher, suggesting a reciprocal relationship between the attitude and achievement.

To summarize the findings on internality, it appears to be a personal quality of considerable importance in academic motivation, yet a quality which is relatively lacking in Negro and lower class white children. At least in Negroes it is not closely related to home background factors; rather, it seems to be highly responsive to the social environment (specifically, the racial composition) of the classroom.

Self-confidence, another aspect of internal control or personal efficacy, was found by Roen (1960) to be lower for Negro than matched white soldiers (and more highly correlated to IQ among the Negroes than the whites). Studies of alienation and anomy are also relevant there; these concepts representing low extremes of personal efficacy. Middleton (1963) measured five aspects of alienation (powerlessness, meaninglessness, normlessness, cultural estrangement from work) with a representative sample of adults in a southern community. Negroes were more alienated than whites on each criterion except cultural estrangement from work. Amount of education was negatively related to degree of alienation by each of the criteria in both the Negro and white samples. Lefcourt and Lading (1966) also found alienation (with measures of "powerlessness" and "normlessness") greater among Negro than white reformatory inmates. Anomy has been shown to be related to both race and social class by Killian and Grigg (1963), and to an "access to goals" index (including occupation, education, income, age, social mobility, participation in organizations, etc.) by Meier and Bell (1959).

3. *Anxiety*

Another variable related to achievement dispositions is that referring to anxiety in school or school-related situations. Evidence that Negro pupils in racially isolated schools have inordinately high levels of anxiety has recently been obtained by Feld and Lewis (1967). These investigators administered the *Test Anxiety Scale for Children* to the entire second grade population of a large school system in the eastern part of the United States. Negroes were found to have substantially higher anxiety scores than whites not only on the total scale but also on each of four subscales which were derived by means of factor analysis: test anxiety, remote school concern (e.g., "When you are in bed at night, do you sometimes worry about how you are going to do in class the next day?"), poor self-evaluation, and somatic signs of anxiety. Interestingly, a group of Negro children in racially mixed schools obtained scores about midway between those of the *de facto* segregated Negro and white samples. However, the meaning of this comparison is not entirely clear, since the Negro children in desegregated schools came from homes of relatively high socioeconomic status, a factor found to be associated with low anxiety. Sex differences appeared for white pupils—white boys obtained lower anxiety scores than white girls—but not for Negroes.

School anxiety in Negro boys and girls was strongly related to the mother's educational level when other home factors were controlled, a finding that is consistent with the research of the Sarason group (Sarason et al., 1960; Hill and Sarason, 1966) on white children which reveals that parental influence is a key determinant of school anxiety. In another relevant study, Katz (1967) has analyzed the role of parental behavior and attitudes by means of a Reinforcement History Questionnaire that inquired of the child about characteristic parental reactions in a variety of situations. Katz found that among northern Negro boys (though not among girls) school anxiety, and a propensity for devaluation of own performance, which were interrelated, were each in turn related to the predominance of negative reinforcements from parents—to reports of low parental interest and acceptance and high parental punitiveness. Moreover, these variables—anxiety, self-devaluation, and perceived parental punitiveness—were all clearly related to school achievement. Katz's data extend to Negro boys one of the main findings of Hill and Sarason—the substantial linkage of school anxiety and academic failure—and shed additional light on the kind of family socialization practices that give rise to school anxiety.

If inadequate social reinforcement in the lower class Negro home figures importantly in the development of emotional blocks to learning, it would be desirable to know a great deal more than we do at present about the child-rearing values, attitudes, and behaviors of Negro parents. The most relevant recent studies have involved class comparisons of Negro mother-child interactions based on direct observations of behavior. Kamii (1965) compared maternal behavior toward 4-year-old children of lower class and upper middle-class mothers in a midwestern community. The two groups differed considerably in their socialization practices. Middle-class mothers were observed to gratify children's affectional and security needs, to use bilateral influence techniques, to encourage and reward children for verbal efforts, and generally to reinforce desirable behavior significantly more often than lower class mothers. Another investigation in the North (Hess et al., 1965) sampled a wide social spectrum of Negro families. Four social-class groups of mothers and their 4-year-old children were selected. In general, the class differences observed in maternal attitudes and behavior were consistent with those reported by Kamii: upper middle-class mother praised the child's achievement efforts more than did other mothers, and were more likely to favor supportiveness as opposed to demanding unquestioned obedience to injunctions and commands.

The observations of Kamii (1965) and Hess et al. (1965) are consistent with general sociological knowledge: in crowded lower class homes, where mothers often are away at work during the day, and both parents lack intellectual sophistication, the child's early efforts at verbal and cognitive mastery are less likely to be favorably reinforced than in middle-class homes, resulting in lower expectations of reward for intellectual effort. Low expectation of reward in combination with relatively high expectation of punishment for failure to meet adult demands probably lays the groundwork for the later emergence of school anxiety.

Thus, school anxiety would seem to qualify as a personality factor that is (a) characteristic of lower class children, (b) related to academic performance, and (c) an outcome of early experiences in the home.

4. *Effective Task or Work Orientation*

Hard and consistent evidence on the causal antecedents of effective task orientation is difficult to find. Some broad conclusions, however, can be drawn. A very early child-rearing climate marked by (1) recognition and prompt support of the infant's needs, and (2) the presentation of a rich variety of sensory inputs appears conducive to the nourishment of an alert responsiveness to the environment, to the cultivation of a disposition to manipulate the environment, and to the capacity to respond appropriately to the consequences of one's manipulative acts.

It is quite likely that more systematic research will confirm the growing belief that difference in the physical and interactive qualities of very early environment (including patterns of stimulation of the child and of social responses to the child's responses) account in significant measure for the manner in which the child learns to perceive and adapt rationally to task-solving circumstances later on. It is here, very likely, that research will locate the origins of an eager, confident, outgoing responsive style vis-a-vis the environment and, oppositely, the hard-to-reverse unresponsiveness and avoidance of environmental manipulation that mark those children broadly labeled "culturally and socially deprived." The child who exhibits the latter behavior, just as surely as the one who exhibits the former, has learned ways of interpreting the environment as well as a pervasive posture toward dealing (or not dealing) with it. It now appears evident that it is not so much the roughly defined cultural environment or the socioeconomic class of the family which is central in shaping the patterns of orientation toward work and task solving as the idiosyncratic interpersonal experience in which the child is so intimately enmeshed. Cultural milieu and social class are but gross indicators of the relevant psychological variables in the interpersonal relationship. Thus, further intensive work on the impact of parental role modeling upon habits of task orientation is indicated.

Despite what was said about gross mapping of behavior in terms of family socioeconomic level, it is generally believed that middle-class families value achieving behavior as reward producing and as a vehicle for upward economic and social mobility. The opposite value typifies the household of the culturally disadvantaged child. His parents, older siblings, and close neighbors frequently distrust education and institutionalized work as means to self-improvement and it seems very clear that such attitudes are acquired early and pervasively by the child. Thus, the promised rewards that society, and teachers in particularly, hold out verbally to the child contain little meaning for him and may, in fact, evoke both hostile and avoidance reactions.

Additional environmental correlates of the poor work habits and attitudes commonly associated with culturally disadvantaged children include: (1) highly restricted life space, i.e., limited geographic and social boundaries for experiencing the world (e.g., kindergartners to fourth graders among the culturally disadvantaged rarely get very far from their homes); (2) inadequate human work models among the parents and in the neighborhood and, often, the permanent or long-term absence of one parent from the home; (3) absence of creative toys and reading material in the home; (4) a devaluating of both the child's intellectual promise and his performance; (5) a "street corner" ethos which furnishes fantasies of personal success and power that typically exclude reference to the mediating role of education; and, at bottom, (6) a frequently held and abiding belief, acquired from and sustained by the reference group, that the prevailing social system is an efficient and watchful trap permitting few avenues of status improvement by fair means.

The child who has acquired a productive problem-solving and work style is generally viewed as "successful" in his social and emotional performance. This is partly because the adults in his life tend to equate the two concepts: to exhibit satisfactory coping and mastery behavior *is* to be socially and emotionally mature. But it is also because demonstrating that one can compete and achieve at acceptable levels in school and work tasks can provide a powerful impetus to personal autonomy. Society is apt to respond to the productive child by relaxing some of the constraints upon his behavior and extending opportunities for higher level experiences which are potentially maturing. Questions of cause and effect aside, we would ordinarily expect that the child who displays successful, self-initiated task-oriented behavior is less fearful of rules and authority figures, is more disposed to explore unfamilar domains, and is willing to attempt unorthodox solutions to problems. Where confrontation with occupational life plans is concerned, we find that such a child is more likely, on reaching adolescence, to consider a broader-than-average range of possible vocations, including some novel ones.

The dismal social consequences of maladaptive behavior among the victims of psychosocial deprivation can often be clearly seen in relation to the work role. Even in an age of affluence with its changing meanings of work, learning how to make the transition to worker remains a focal development task for the majority of American adolescents. The formidable array of conditions which make rational vocational choice, planning, and adjustment difficult for large numbers of today's middle and upper class youth—prolonged economic dependence through adolescence, delayed age entrance into the labor force, heightened formal educational barriers to work entry, the paucity of visible occupational role models, the impersonality and enormous complexity of the contemporary technical work structure, the rapid rate of occupational innovation and obsolescence—all of these combine to produce a particularly disastrous effect for many among the severely disadvantaged.

Typical consequences in the work-related behavior of such individuals during adolescence include: (1) persistent feelings of personal inadequacy as worker-to-be; (2) lack of a sense of urgency whereby one simply does not believe in the efficacy of rational planning for one's future; (3) disturbing disparity between one's verbalized occupational aspirations and one's sober expectations; (4) subjective occupational foreclosure whereby one prematurely and unconsciously rejects many broad job categories from consideration on vague grounds; (5) lack of realism evidenced by poor understanding of the sequence of preparatory steps leading to the announced vocational goal. As the youth who is here described moves into the world of work and through his career history, still another set of worker attributes is exhibited, equally dismaying:

- An inappropriate work etiquette exposes him to serious misunderstanding of his duties and obligations and to interpersonal conflicts, particularly with immediate work supervisors. Work adjustment studies summarized by the U.S. Employment Service have revealed a larger number of work dismissals on grounds of personality and character difficulty than for reasons of submarginal skill or ability. It is a shared belief that many of those so dismissed have histories of protracted cultural deprivation.
- Transitory and extrinsic motivation attaches to the work of such an individual. He looks chiefly for short-term, tangible returns from his job. Intrinsic rewards and the prospect of long-term advancement do not occupy a significant place in his perception of the work he performs. Self-actualization through work is at best a remote possibility for him, partly because of the demeaning jobs he normally occupies but also because his work imagery and anticipations cannot accommodate the notion that occupational experience may be self-fulfilling.
- The career pattern may be most accurately described as disorderly. It is marked by horizontal occupational mobility in which much aimless shifting occurs between jobs of low skill, prestige, pay, and autonomy, with little or no upward movement. The worker is marginal. His career is flecked with frequent episodes of unemployment and underemployment. Taken as a group, such undereducated and poorly socialized youth among the culturally disadvantaged, in the age range 16–19, possess an unemployment rate two to three times the national average. If one adds the condition of nonwhite racial status, the rate soars to approximately six times the national norm. The social and economic loss to the nation deriving from such disenfranchisement is incalculable.

Serious gaps exist in the available body of knowledge concerning the differential effects of child-rearing experiences, especially those experiences characterized by psychosocial deprivation, upon task-oriented behavior, work attitude, and work style. Any new national strategy of research should incorporate, at the very least, the following corrective measures: (1) increased efforts at linking significant variables in early childhood with subsequent work-relevant dispositions and response patterns; (2) heightened use of available pools of longitudinal data (e.g., Fels Research Institute and Menninger Clinic) extended to the periods of late adolescence and early adulthood (during which periods overt work behavior begins to occupy a significant life role); (3) a shift in emphasis in the study of vocational development from heterogeneous, culturally undifferentiated populations to particularized populations, including the severely socially disadvantaged and the several major ethnic minorities distributed within the major culture.

5. *Various Values, Attitudes, and Beliefs*

A number of studies have investigated various *values, attitudes,* and *beliefs* which appear to be relevant to achievement. Many of these have also been found to be related to social status. Rosen (1956) has defined an achievement value orientation composed of values for activism (opposed to passivism), individualism (opposed to familism), and future (as opposed to present) time orientation. A total value orientation score derived from scores on these values was highly related to social class among high school boys. However, in another study, Rosen (1959) found American Negroes to be relatively high on achievement values, although low on need for achievement. Strodtbeck (1958) showed the same values to be differentiated between ethnic groups, and to be related in adolescent boys to relative equality of power between the two parents. Lott and Lott (1963) found achievement-related values and goals to be similar between Negro and white youth.

Vocational and educational aspirations have generally been found to be higher for middle than lower class individuals, but higher for Negroes than whites within class levels (Rosen, 1959; Wylie and Hutchins, 1967; Wilson, 1959; Coleman et al., 1966). An extensive literature on educational and job aspirations and expectations has been ably reviewed by Proshansky and Newton (1968). Studies of Negro and white children and their parents generally show only small differences when social class is controlled. Comparing classes, aspirations of high- and low-income adults and children are consistently reported as high—most individuals at both economic levels desire college attendance and professional or white collar occupations. Thus as regards expressed achievement *goals,* the "culture conflict" hypothesis would seem to be in error. However, when realistic *expectations of achieving the goals* are measured, stable class differences appear: these more *functionally relevant* goal levels are lower among low-income students and parents. (Though even statements of "realistic" expectation from the poor are often unrealistically high, when measured against the objective availability of the stated goals or against actual striving behavior.)

Thus it seems that the main difference between the achievement orientations of the poor and the affluent lies not in the choice of goals, but in expectations of attaining them.

Negroes have also been reported to be more optimistic about the future, particularly in the South and at lowest occupational and educational levels (Pettigrew, p. 185). A comparable pattern has also appeared in regard to conceptions of one's own academic ability, with lower class children having less favorable conceptions than middle class, but, within the lower class level, Negro children having more favorable conceptions than white (Wylie and Hutchins, 1967). In a study by Gibby and Gabler (1968), Negro children scored higher than white children, equated for IQ, in ratings of their own intellectual ability, the Negroes "over-rating" it, and the whites being more "realistic."

Achievement-related attitudes have been investigated in a number of studies making cross-status comparisons. Sewell and Haller (1959) found lower class children to be more concerned about achievement than middle class; while Neale and Proshek (1967) found middle-class children to give more positive semantic differential responses to words denoting rules or property (my school books, having to keep quiet, following rules, my school building). That the difference in orientation apparent in the latter study is a result of communicated parental attitudes is strongly suggested by Hess and Shipman's (1965) findings that low social status Negro mothers, when questioned about hypothetical problem situations concerning the child at school and about their planned instructions to the child on his first day at school, tended to respond in terms of role norms and emphases on rules, authority and compliance, while the upper status Negro mothers responded more in terms of personal characteristics of the child and educational potentialities of the school situation.

In relation to the entire question of achievement motivation among disadvantaged children in school, the contribution of teacher behavior and teacher expectations has been stressed by Clark (1965). He places responsibility for the massive academic failure of ghetto schoolchildren squarely on the teachers and school administrators. To Clark, every one of the assumptions associated with the terms "cultural deprivation" or 'cultural difference" is "primarily an alibi for educational neglect, and in no way a reflection of the nature of the educational process." He believes that a key component of the deprivation which afflicts ghetto children is that generally their teachers do not expect them to learn, and have adopted, as their concept of their function, custodial care and discipline. The role which such a proximal environment can play in children's own expectations of achieving a sense of internal control is obvious. The entire issue of achievement motivation, especially the socialization of motivation for school achievement cannot be dealt with without assessment of the role of teacher behavior and teacher expectations (Rosenthal, 1968).

To summarize: Middle-class children have been found to score higher than lower class children on measures of need for achievement, value on achievement, aspirations, conceptions of own abilities, orientation to persons (rather than rules), sense of internal control or personal efficacy, anxiety, and school anxiety (qualified by interactions with other variables). White children have been found to score higher than Negro children on the measures of need for achievement, internal control, while Negroes were equal to or higher than whites on measures of achievement values and aspirations, optimism, and ratings of own ability. The possibility that some of these latter may be wishful or defensive has been suggested by Katz (1967c). Such parental qualities as warmth, involvement, dominance, and participation have demonstrated some relationships to children's achievement needs, values, and behavioral striving; such investigations, however, have not as yet been done extensively with low-status children.

In general, research relating psychosocial deprivation to achievement dispositions has produced many promising leads, some interesting convergences of findings, but little solidly established knowledge. Too many of the variables lack conceptual clarity, too many of the measures or measurement techniques have doubtful validity, too few variables have been employed consistently across different studies. Perhaps the general deficiency, from which these facts derive, is the lack of a broad theory focusing on deprivation and achievement dispositions, capable of encompassing and integrating the varied findings just summarized.

The Development of Self-Esteem

This section is focused on the relationship between psychosocial deprivation and the development and enhancement of self-esteem. Self-esteem is defined as the individual's evaluative attitude toward himself. The attitude may range from extremely positive to extremely negative and appears to be quite stable over a period of at least 5 years. Other terms similar to self-esteem, and which have been used in much the same way, include self-respect, confidence, positive self-image, and worthiness.

Although the importance of self-esteem has been recognized, most of the relevant assumptions and procedures have only recently been appraised. We should also note that when we consider the significance of esteem, we are dealing with a psychological state which is central to the social, political, and religious thought of our culture. There are differences of opinion as to whether esteem should be achieved through work, power, good deeds, etc., and there are different criteria as to who has attained it, but there appears to be widespread agreement that the goal of positive worth is personally satisfying and publicly worthwhile.

We should note early that it is the *pattern* of performance expectation and value that is critical to self-esteem and not the separate components. Further, self-esteem is ultimately a *personal* judgment of one's worthiness. Other persons may make aspersions, render respect or ignore it, but in the final analysis it is one's acceptance of other persons' judgments that determines their efficacy. The level of self-esteem thus reflects *the extent to which successes approach expectations in personally valued areas,* and the ability to accept and reject the insults and compliments of others. Thus, for example, a person who values academic competence, as appears true for most disadvantaged youth (Feld, 1967; Shaw, 1965), but who performs poorly is likely to suffer devaluation (Kozol, 1967; Deutsch, 1960). For such a person to define himself as successful would require a diminution of the value of education, lowered expectation, or a defense (attack, withdrawal, etc.) against the school system. From what we have learned, each of these changes has frequently occurred among disadvantaged youth. Another thing we should note is that changes in any part of the system (values, expectation, defenses) will have important implications for the resultant definition of personal success. A person whose expectation rises so that he no longer regards being a janitor or day laborer as a valued goal and enhancing position will suffer repudiation and personal failure if such employment is offered. Similarly, a Negro who has accepted the white man's judgment of his rights and powers as appropriate may defend himself against those very judgments if he concludes that his own interpretations of his rights and powers are more valid and compelling. The ability to resist diminution conferred by such mottoes as "black power" may thus confer defensive strengths to many Negro youths.

Before turning to a general summary of current knowledge about psychosocial deprivation and self-esteem, it is necessary to indicate how psychosocial deprivation is defined. The term "psychosocial deprivation" will be used in the specific sense of "conditions that produce low self-esteem." Conditions that reduce feelings of worthiness, competence, and power include both the absence of favorable influences and the presence of harsh, rejecting, and destructive factors. Since the absence of favorable conditions is not the only manner in which low self-esteem may be achieved, the terms psychosocial vitiation or deterioration might be more exact than psychosocial deprivation.

1. *Consequences of Low Self-Esteem*

There is abundant evidence that low self-esteem has destructive effects upon human behavior and considerable evidence that persons who live in conditions of family disorganization, financial instability, and social rejections are likely to be lower in esteem. While the destructive consequences can be considered at length, even a brief listing indicates the pervasive social, personal, and vocational harm resulting from negative attitudes towards oneself. Thus we find that persons with low self-esteem tend to be socially withdrawn and apprehensive, inclined to reject their own perceptions and judgments and accept those of other persons, and lacking the social skills and ease that make for friendships and social participation. They are likely to be self-conscious and preoccupied with their own deficiencies and overwhelmed with feelings of helplessness and hopelessness. Such feelings are expressed in higher levels of anxiety, higher levels of (psychosomatic) symptoms and reduced effectiveness in performing academic and vocational tasks. Lacking trust in their capacities and anticipating failure, they are inclined to be cautious in their explanations, limited in the risks they will assume, and quick to cease their efforts. Convinced that their powers are too limited to have a favorable influence upon their future lives, they tend to lose hope and adopt a pessimistic and fatalistic view towards the failures and unhappiness that presumably await them (Coopersmith, 1967; Diggory, 1966; Rosenberg, 1965).

Studies of disadvantaged youth report that many effects of low self-esteem occur among the poor, particularly those likely to suffer from prejudice and social repudiation. Coleman's study (1966) of schoolchildren revealed that feelings of helplessness and inferiority, i.e., an inability to affect one's future, were pronounced among Negro youth. Other studies point to feelings of passivity and defeatism, an effacive self-image, and expectation of failure (Bloom, Davis, and Hess, 1965; Deutch, 1960; Riessman, 1962). Davidson and Lang (1960) report that lower class children believe that teachers reject them and expect them to fail, and they acquire their teacher's (negative) perceptions of themselves. In many instances where self-esteem has not been examined directly, observation of other attitudes, interests, and motives provides indirect indications of defeatism, anxiety, and withdrawal.

Apparently the aspirations of youth from all levels of the social systems are similar although their expectations appear to differ significantly. On the level of an individual child we may anticipate that experiences of success lead to expectations of success so that personal, meaningful aspirations become higher. Persons with low self-esteem are as desirous of success as are others but, given their backgrounds, they are less likely to believe that successes will actually occur. These persons do not believe that they have the capacities that make for successful acceptance and social acceptance, and they anticipate that their goals will remain unfulfilled and their ambitions frustrated. This pessimism lowers confidence and, in the nature of a self-fulfilling prophecy, reduces effort and persistence. On this score we should note the vague goals of disadvantaged youth and their expectations of failure and difficulty (Bloom, Davis, and Hess, 1965; Edwards, 1966). While these reduced expectations have the unhappy effect of reducing motivation and available energy, it should be noted that they are a generally realistic response to the facts of rejection, failure, and poverty.

Lower class youth hold lower achievement and vocational expectations and report greater feelings of inadequacy in school (Groff, 1954; Wylie, 1963); their parents express feelings of inadequacy and uncertainty in providing guidance and authority (Minuchin et al., 1967; Silberman, 1964) and feel limited in their abilities to cope with the problems that confront them (Marburger, 1963). While these parental attitudes undoubtedly reflect a gloomy, oppressive reality, they clearly inhibit or intrude upon efforts to improve existing conditions. In that same vein we should note that disadvantaged youth appear to be relatively resistant to new ideas and cautious in their explorations. There is also considerable knowledge that levels of personal maladjustment, mental health problems and family instability are markedly higher among persons who live in conditions that also lower self-esteem.

From the foregoing we may draw three conclusions: (a) Low self-esteem has destructive consequences upon personal motivation, social effectiveness and vocational success; (b) low self-esteem is associated with many conditions associated with poverty, prejudice and social rejection; and (c) persons with low self-esteem are generally incapable of raising their own esteem since they lack the skills and initiative to alter the conditions in which they live.

2. *Conditions Associated With the Development of High and Low Self-Esteem*

The major factors that contribute to the formation of *high* self-esteem can be briefly described in terms of three conditions: *acceptance* of the child by his parents (or surrogates); clearly defined *limits* and values; and *respect* and latitude within the defined limits. In effect the parents are concerned and attentive, offer guidance and direction by structuring the world, and permit considerable freedom and individual expression so that initiative and communication are fostered. Such evidence as we do have indicates that the limits, rules and regulations established are reasonable and rational, rather than arbitrary, inflexible and punitive. The combination of limits and love provides standards by an accepted authority, a situation likely to result in internalization of criteria, and rewards. The limits provide a basis for evaluating present performance and progress, indicate that the social world has a structure and meaning, and define the expectations that must be met if one is to be regarded as successful. Another condition associated with the formation of self-esteem is the self-esteem of the parent; parents who are themselves high in self-esteem are likely to have children who regard themselves favorably; those low in esteem are likely to have children who regard themselves unfavorably.

Perhaps the most striking feature of findings regarding the families of disadvantaged youth is the consistent *absence* of conditions associated with formation of *high* self-esteem. In point of fact, the evidence regarding conditions in these families presents virtually the same pattern as has been associated with the formation of low self-esteem (Coopersmith, 1967; Rosenberg, 1965). Several findings point to lack of authority, indecisiveness, and disorganization—conditions associated with low self-esteem—among parents of disadvantaged youth (Pavenstedt, 1967; Minuchin, 1967). These disorganized families—led by parents who are often absent, apathetic, or rejecting—are generally incapable of responding to the challenges and demands of their children. They do not provide good models of how to succeed, and they do not convey the instrumental techniques required for academic and vocational achievement. The parents in these families lack belief in their ability to guide and change their children's lives and so they permit and encourage their offspring to obtain advice and assistance from their peers. In many instances these parents are nurturant, but this nurturance is often limited to gratification of infantile needs for candy, toys, and money, and attention to grooming, without appreciation of needs for deeper affection and guidance (Reissman, 1964; Ausubel, 1963; Bloom, Davis, and Hess, 1965). If rejection is not always present, as appears true among Negro families, there are also few limits, limited respect, and few favorable models, particularly for boys (Hauser, 1966; Edwards, 1966). Authority is often arbitrary, marked by extensive use of physical punishment and a reliance upon external constraints rather than the development of internal controls. Thus, despite the fact that many mothers in these families are warm and concerned about their children, that concern is limited in focus, associated with parental feelings of inadequacy, and incapable of providing goals, guidance and skills. The net result is that the disadvantaged youth is *not provided limits* and *respect,* so that if he is accepted it is generally an infantile nurturance provided by persons who disesteem themselves.

There are, of course, conditions other than parental treatment that contribute to the formation of self-esteem. Prior studies indicate a weak though significant relationship between social class and self-esteem, and no relationship between ethnic affiliation and esteem. These results do suggest that, above a certain minimum level of status and subsistence, occupation, education and finances may play a lesser role than is generally assumed (Rosenberg, 1965; Coopersmith, 1967). Apparently, once individuals achieve some minimum in confidence and organization, the personal family situation may become more significant for esteem than is the broader social context.

Unemployment and uncertain employment are associated with low self-esteem, as is the father's frequent absence from home—all conditions that prevail in the families of disadvantaged youth. Membership in a minority group per se is not necessarily associated with low self-esteem (Jews)—although members of other groups which do not provide the same degree of attention and structured guidance appear to make lower self-appraisals. Discrimination also has destructive consequences although some groups that have been discriminated against (Jews) are much less affected by it than are others, i.e., Catholics, Negroes (Rosenberg, 1965; Clark, 1965). It appears that it is not discrimination per se but the person's acceptance of his oppressor's judgment and standards, and rejection of his own standards, that is likely to produce self-devaluation.

The Development of Moral Values, Ideology, and Personal Controls

The facts of linkage between moral behavior and attitudes, and low socioeconomic status and low social or ethnic group status include: greater incidence of delinquency and lawbreaking in the lower class; greater incidence of "yielding to temptation" on experimental measures of honesty by nondelinquent lower class children (Grinder, 1962; Hartshorne and May, 1928, 1930); lower incidence of expressions of internalized guilt about transgression in lower class children on projective measures (Aronfreed, 1961; Hoffman, 1961); and, greater incidence of physically aggressive behavior in lower class nondelinquent children. If social status is indexed not only by income, but by social or ethnic inferiority status, the results are more striking. Negro lower class urban children are less "moral" than white lower urban children on all the behaviors listed. While these facts are clear, it is not at all clear that they imply that basic defects in moral or conscience development are more frequent in low-status groups.

Nor is it possible to argue simply that the lower class has a different set of moral standards than the middle class. On this point, it has been shown that the "social virtues" or values behaviorally more manifest in middle-class children (e.g., honesty, sexual restraints) are as highly valued or more highly valued by lower class than by middle-class parents and children (Kohn, 1959; Rettig and Pasamanick, 1961; Lehrer, 1967). Also, the age development trends and sequences of basic moral values, or moral judgment modes, and of reactions to transgression (guilt) are the same in the lower class and middle-class children. Both middle-class and lower class children move in the same direction, only the middle class does so faster (Kohlberg, 1958; Boehm and Nass, 1962; MacRae, 1954; Aronfreed, 1961; Wright, Hill and Alpert, 1961).

Certain basic research findings about moral character indicate that it is useful to think of two types of determinants of moral action, both linked to age development. The first type of determinant is "ego strength," which includes (at least) the following abilities: IQ; reflective and analytic style of cognitive controls; future time perspective and capacity for delay of reward; capacity for sustained attention; desire for autonomous achievement or "n. ach."; internal locus of control; and absence of low self-esteem and anxiety.

All but the last two of these traits increase with age and all are correlated with one another, although each is also somewhat independent of the others. All are clearly and consistently related to moral behavior or resistance to temptation in children as usually measured by teacher's ratings of "conscience" and by experimental measures of honesty. As a single example, a measure of attention and a summed measure of experimental honesty correlated 0.62 with one another. Finally, all have been found related to socioeconomic status, i.e., lower class children perform more poorly on all these measures.

One implication of these findings is clear cut. To a considerable extent moral behavior is determined by the same abilities that determine effective cognitive performance and school achievement. The implication is that the same conditions which cause poor learning and poor achievement in psychosocially deprived children also cause retardation in morally relevant "ego strength" traits. In that sense, there is nothing specific to the area of moral psychosocial deprivation.

There is however, a second area of development which contributes to moral behavior. This is maturity of moral judgment, moral values or moral ideology. While maturity of moral judgment and ego strength may be differentiated from each other by research methods, both are part of the broader picture of ego development. There is reason to think, however, that what has been termed "ego strength" develops and stabilizes earlier (e.g., age 1–9) than does maturity of moral ideology which seems to stabilize in preadolescence (age 9–13). As mentioned earlier while adult maturity of moral judgment is quite predictable from status at age 13 it does not appear predictable from status at age 9.

With regard to "psychosocial deprivation" effects of socioeconomic and racial status upon moral ideology, the developmental view has stressed status-linked deficiencies in "role-taking opportunities." Social class differences operate in the same direction as differences between peer group "stars" and peer group isolates, i.e., the more social participation, the more rapid the development of a mature moral ideology, one based on identification with the social order and with principles of justice. The point is that maturity of sociomoral perception and sense of participation are closely linked. It is simply the case that greater power and participation are most marked with regard to the institutions of work and of government and law. However, they are equally clear with regard to institutions closer to the child, such as the school. Social class differences in feelings of participation in, and influence in the schools, are apparent in any studies on the subject.

To summarize, class differences in morality have been defined in terms of two maturity components, ego strength and maturity of moral ideology. Class differences in ego strength are manifested early and are presumably generated by all the factors discussed under the heading "educability." Class differences in maturity of moral ideology appear somewhat later (preadolescence) and are linked in large part to perceptions of the larger social institutions and of the justice of these institutions.

It is useful at this point to consider further one of the aspects of moral development which has been categorized under ego strength and on which a good deal of research has been accomplished. This aspect, the ability to defer gratification, can serve to illustrate the details of findings which link moral development to the environment, on the one hand, and to behavior on the other.

The ability to delay immediate gratification for the sake of later, larger outcomes is generally recognized as a crucial prerequisite for many complex human activities, and has had a major place in a variety of theoretical formulations. In the last decade a number of investigations by Jerome Singer and his associates have inquired into the correlates of "delaying capacity," primarily as inferred from the freqency of human movement (M) Rorschach responses or other indirect indices.

Another research program, conducted by Mischel, has investigated delay behavior. These studies typically employed a research paradigm in which subjects are confronted with real choices between immediately available but less valued rewards, as opposed to delayed but more valuable outcomes (e.g., Mischel, 1966). For example, children choose between a little candy bar now or a larger one which requires waiting a week, and make a series of such choices. Choice procedures of this type were administered to samples of Negro West Indian and U.S. elementary school children who were also tested with a variety of other measures. The results provided evidence that delay responses are relatively consistent, tend to increase with age, and are systematically related to numerous other theoretically relevant variables, usually subsumed under "ego strength" constructs. Studies have demonstrated positive relationships between preference for delayed more valued rewards and measures of social responsibility, achievement motivation, and certain rearing conditions such as the presence of the father in the home and other sociocultural indices.

As a result of both correlational and experimental studies some of the main determinants of voluntary delay of reward are becoming clearer (Mischel, 1966). To a large degree a person's willingness to defer immediate gratification for the sake of more distant and delayed but more valuable outcomes depends on his relevant expectations. Of particular importance are the individual's expectations that future rewards for which he would have to work and/or wait would actually materialize and their relative value for him. Such expectations or feelings of trust depend, in turn, on the person's history of prior promise keeping, and on past reinforcement for waiting behavior and for other forms of planful, goal-directed self-control. When the attainment of delayed gratification requires the person to reach particular achievement levels, then his willingness to work and wait for these future outcomes also hinges on his expectations that he can fulfill adequately the necessary contingencies. In addition to his direct personal experiences in this regard, vicarious learning experiences through observation of the behavior of social models—such as peers, parents, teachers—substantially influence self-control patterns. The potency of social models as influences upon the observed depends on such variables as their power and nurtuance, their relationship with the observer, and the consequences to which their own behavior has led.

Psychosocial deprivation undermines exactly those conditions most necessary for the development of appropriate and adaptive impulse control systems. Psychosocial deprivation seems almost synomymous with the absence of admired and powerful prosocial models in the home and community, with lack of trust regarding future payoffs and delayed goals, and with deficits in both the skills and motivations required for constructive, sustained, future-oriented action, planning and work. Moreover, deficits in self-control readily lead to increasingly aversive effects and self-fulfilling chains of frustration for the disadvantaged person and for his society. Lack of trust, for example, mitigates against long-term commitments with others, which in turn prevents reinforcement for delay behavior and strengthens alienation.

In summary, research on the organization of self-control patterns has examined the correlations among diverse indices of self-control, e.g., conscience, resistance to temptation, self-gratification delay. The overall results indicate a considerable degree of situational specificity (Mischel, 1968). While correlations among some indices of self-control often do reach statistical significance, the relationships tend to be low. The overall results suggest that notions of a unitary traitlike "conscience" or "super ego" are gross oversimplifications. Nor has it proved very useful to try to categorize individuals as having stable, highly generalized dispositions with regard to a broad array of self-control patterns in many settings.

The Development of Social Roles

A broad view will be given of social roles and factors which influence their development. More recently, interest has developed in the particular skills involved in conducting role transactions or, put in other terms, interpersonal competence. Little empirical work has yet dealt with this latter subject, especially as it relates to psychosocial deprivation. The topic will be dealt with in the section following this one; it focuses on forms and development of interpersonal competence skills needed for the establishment and maintenance of social interaction, and for influencing other behaviors.

Social roles are patterns of behavior expected of persons when they occupy social positions such as those of worker, marriage partner, and parent. The development of social roles is a prolonged, complex, and cumulative process. Disadvantaged populations often suffer because their access to certain adult positions is restricted by outmoded customs, ignorance, or prejudice. But they also suffer because improverished childhood experiences make it difficult to acquire the social attitudes and skills required in certain adult roles. As our society breaks into this vicious circle by eliminating the legal, political, economic, and social barriers to first-class citizenship, it must also understand and attempt to improve the conditions underlying the acquisition of social roles during childhood and adolescence.

Extensive experience and cognitive growth are necessary to deal effectively with social relationships and maintain flexibility in the complex and rapidly changing social conditions of today. Under conditions of psychosocial deprivation, effective social role development becomes extraordinarily difficult.

To cite a prominent example, the Negro child growing up in an urban ghetto may live in a family in which the father is absent as a stable member, and where the mother takes on maternal and paternal responsibilities under proverty conditions. Given these circumstances, it would not be surprising to find that the child acquires misunderstandings about social relationships, that he develops negative feelings about certain normal role behaviors, and that he adopts social behaviors for himself which turn out to be inappropriate later in life. Such dysfunctional consequences will tend to accumulate and be compounded during the long periods of childhood and adolescence, often leading to adult role behaviors that are at odds with the standards of society.

1. *Varieties of Social Role Performance and Process*

Distinctive role behaviors are attached to each social position that the individual occupies. Each of these roles, in turn, consists of many behavioral components. For example, the parental role includes behaviors and activities associated with planning family life, managing family affairs, and carrying out the tasks of childrearing in relation to each child in the family.

Considerable research has been conducted on the relationships between psychosocial deprivation and the adoption of deviant role behaviors, including criminality, delinquency, and psychopathology (Ausubel and Ausubel, 1967; Pettigrew, 1964; Short, 1966). Further research is needed in these areas in order to clarify causal relationships and to evaluate a variety of remedial programs. However, the present review gives particular attention to research on those processes underlying the development of "legitimate" role behaviors.

2. *Psychological Underpinnings of Social Role Development*

Social role development involves several psychological functions which must be mobilized and combined to produce appropriate role behaviors. Specifically, the individual must be *motivated* to adopt appropriate social roles, he must develop an accurate *understanding* (cognition) of these roles, and he must have the opportunity to *learn* them.

a. Motivational processes.—Basic to social role development is a desire on the part of the individual to adopt behavioral characteristics expected by the society. Deprived environments create two hazards in this respect. First, they are likely to induce motives to adopt inappropriate social roles. For example, Negro males who grow up in the urban ghetto tend to adopt an overly aggressive (and counter-aggressive) posture in their relationships with males (Bronfenbrenner, 1967; Pettigrew, 1964). They also tend to withdraw from the stable heterosexual relations and child-rearing responsibilities associated with marriage (Pettigrew, 1964). Secondly, deprived environments induce motives to inhibit certain behaviors which are highly appropriate in the context of the larger society. The boy from the ghetto may be afraid to express a variety of constructive motives in his own behavior. Indeed, research has found that some of these boys are likely to suppress their natural abilities in the school setting because the role of student is seen as useless for their lives, to reject their own inclinations to be kind and respectful of others because these behaviors smack of "softness" or femininity, and more generally, to distrust their own aspirations because of chronic self doubts and feelings of worthlessness (Ausubel and Ausubel, 1967; Bronfenbrenner, 1967).

When socializing agents neglect the child's physical or psychological needs, as may be the case in deprived environments, the child often will try to satisfy these needs by himself in whatever way he can. These premature efforts to be independent of others can have dysfunctional consequences (Ausubel and Ausubel, 1967), including the development of attitudes of mistrust toward socializing agents.

As the child develops, he may feel compelled to choose between social roles that are inconsistent or mutually exclusive. The stress accompanying role conflict tends to be particularly severe in certain culturally deprived contexts, where the significant figures in the child's life will include persons who support certain deviant values of the subculture as well as persons who represent the more legitimate values of the larger society.

b. Cognitive processes.—Effective role functioning depends upon accurate perceptions and understandings of role behaviors. Relatively little research has been conducted to date on the development of social role cognitions either in deprived or nondeprived populations.

Social role performance requires both an accurate reading of one's own position in a social structure and an understanding of the behaviors appropriate to that position, both of one's own and the other. There is evidence suggesting that a basic formative step taken by the young child is to "locate" his own social position, especially with respect to whether he is a boy or girl (Kohlberg, 1966) and whether he is a child or adult (Emmerich, 1966). While these simple categorizations seem obvious to adults, evidence suggests that they are rather slowly grasped in early childhood because they depend upon cognitive growth in the child's ability to understand the invariance of his own identity despite changes in social context (Kohlberg, 1966). This process of identity formation is perhaps even further complicated in socially deprived populations, where obvious physical characteristics, such as skin color, create identity categories that are likely to be interpreted as stigmata. Of particular interest here is the question of the kinds of associational links established *among* identity categories. One thinks immediately of the Negro ghetto boy for whom the identities of male, child, and Negro *all* may have negative connotations within the ghetto community.

c. Learning processes.—Effective role development also requires a supportive learning context in which role performances can become consolidated. Here, research is concerned with the variety of factors that facilitate or impede social learning and performance. These include the clarity and consistency of the social role to be learned, the nature of the reinforcements used by socializing agents to "teach" social roles, and opportunities for practicing appropriate social role behaviors.

Much of the research to date on social role learning has emphasized modeling processes and social reinforcements used by socializing agents. Relatively little research has considered individual differences in opportunities to practice social roles in a variety of settings. For example, the girl growing up in an economically deprived home may be forced to consume much of her time and energy helping to manage the home, thereby limiting her opportunities to participate in school-related activities and the peer culture.

It is likely that some children anticipate their future statuses in fantasy, play, or even in planning for the future. Perhaps these anticipations of adult social roles contribute to effective role development, even when the child's immediate environment fails to provide optimal psychological support. (See Singer, 1968)

d. Unifying concepts.—Research in this area often is stimulated and guided by broad concepts taken from developmental personality theories, including those concerned with psychosexual development, ego development, and identification (Baldwin, 1967; Erikson, 1950; Kagan, 1964; Kohlberg, 1966; Loevinger, 1966).

3. *Categories of Environmental Influence*

a. Social structure.—A common environmental category used in research refers to the social structure, particularly to those *deviations* in social structure reflecting social disorganization. Indeed, social deprivation can be defined in terms of the impingement of deviant social structures upon the individual. A number of studies have related both normal and deviant variations in social structure to social role development (Clausen, 1966; Short, 1966). To give one example, father absence has been found to have a variety of dysfunctional consequences for social role development (Bronfenbrenner, 1967; Pettigrew, 1964, although these results have not always been striking nor consistent (Kohlberg, 1966).

b. Family atmosphere.—A second category of environmental influence refers to the social-emotional "climate" of the family, especially with regard to parent-child relationships. A number of schemes for classifying family atmospheres have been formulated (Clausen, 1966) including a two-dimensional model of warmth-hostility and permissiveness-restrictiveness (Becker, 1964). Studies reveal an association between the extremes of these two dimensions and social role development. For example, aggressiveness tends to occur in children who grow up in a permissive and hostile environment, while a restrictive and hostile environment increases the potential for social withdrawal (Becker, 1964), thereby retarding social role development. There is also evidence that hostile atmospheres occur relatively frequently at the lower socioeconomic levels, although these data are not altogether consistent (Bronfenbrenner, 1967; Stolz, 1967).

Atmosphere descriptions need to be broken down into their component parts and studied as interacting influences. For example, two components of family atmospheres are the *standards* of behavior (norms) held by family members and their *actual behaviors*. Some parents will profess high standards but behave in ways that do not meet them, and this pattern is likely to pose severe obstacles to effective role development in the child. Indeed, such a pattern might be expected to occur relatively often in socially deprived environments in which the socializers themselves have cognitive and linguistic deficits leading to difficultives in integrating their own thinking with their action.

c. Social agents as models.—A third environmental category considers the social models available for the child to imitate. Ordinarily, the child is exposed to a variety of social models, many of whom act in different but consistent and appropriate ways. When role models are absent, or when their actions are inconsistent or deviant, social role learning through modeling can be retarded or distorted (Bandura and Walters, 1963; Kagan, 1964).

Since imitation is an active rather than a passive process, future research might consider the selective ways that individuals imitate certain role models (and behaviors) rather than others. Moreover, modeling processes are likely to vary among age levels and little is known about such age variations, either in deprived or nondeprived environments.

d. Social reinforcement.—The most direct process of social role learning occurs when a person in the child's environment teaches the child to behave in certain ways. Research in this area considers the types, amounts, and timings of social reinforcements used by socializing agents (Mischel, 1966). An example can be seen in the parent's relationship with his son, where the son's masculine behaviors may be approved by the parent and his feminine tendencies disapproved. Such "training" need not be deliberate, however, and can occur through conditioning processes that may be unrecognized by the socializing agent. A great deal of research attention is now being given to the question of how different patterns of social reinforcement alter social behavior (Harris, Wolf, and Baer, 1967). This work holds promise for studies of psychosocial deprivation because it can lead to more precise descriptions of the learning contingencies embedded in deprived environments, and may provide techniques for fostering social role development in deprived populations.

Traditionally, adults have been considered as the primary teachers of social role, but recent studies (in optimal environments) indicate that peers exert considerable influence upon one another as reinforcing agents (Hartup, 1967).

e. Multiple environmental influences.—It is now apparent that research on social role development employs a variety of environment categories. However, the principle of multiple causation can be applied even more systematically in future research efforts.

Increasing attention is being given to the multifaceted nature of each of the major environmental categories considered above. For example, a single index of social disorganization can have a variety of derivative consequences, each of which may have a different influence upon social role development. In the case of father absence, for example, the mother functions atypically with respect to both her role as wife and mother, presenting atypical experiences for the child with respect to the husband-wife, mother-child, and father-child roles. Another illustration of this point is found in the mass media, which greatly enlarges the array of potential social models available to the individual.

Correlations exist among environmental categories, and these correlations probably "overdetermine" certain behavioral outcomes in social role development. The consequences of social disorganization are transmitted through other levels of the environment; i.e., through their effects upon role models, family atmospheres, and patterns of reinforcement. Multiple assessments of variables at each level of the environment together with multivariate analyses make it possible to disentangle these influences. Multivariate procedures allow for the examination of each influence while holding others constant, and lead to conclusions about the total impact of multiple influences. Special attention also needs to be given in research to possible interaction (as well as additive) influences of the environment.

The Development of Interpersonal Competence

A recurrent theme in this review of social and emotional factors in psychosocial deprivation is the importance for the individual of feeling he has some degree of control of his social environment. An important skill, then, in participating in society is the ability to influence others' thoughts, feelings and actions—to shape the responsive treatment received from others.

Society requires for its stability individuals who are interpersonally competent, who can be expected, in the long run, to be fairly effective in pursuing personal purposes. Yet, how are such purposes pursued specifically? What are the underlying skills which make for interpersonal competence? And what are the conditions, particularly psychosocial deprivation, which interfere with the development of such skills?

An important set of interpersonal skills related to influencing others are those required for social interaction, particularly for establishing and maintaining identities in relation to others. Much of the discussion will be theoretical and speculative. This is by necessity rather than choice, for as important as the problem of interpersonal competence is to social and psychological theory and practice, there is little available research to inform us about its antecedents.

The central theme on which this conception of social interaction is based is that the way others relate to an individual in a situation is a function of that individual's identity in the situation. There can be no working consensus nor can interaction long be maintained if there is not substantial agreement as to who everyone is. Thus, who one is can be critically important in the pursuit of personal purposes. Many of the claims one person makes on another and the lines of action used to present those claims are legitimized on the basis of normative expectations regarding the behavior of particular kinds of people.

Agreement about who the participants are, and will be, may not be established directly but may be the result of negotiation, and even subsequent renegotiation. An actor may, by his expressive behavior, call attention to aspects of himself that serve to establish his identity. This is the self-presentation about which Goffman is so eloquent. Or, the actor may attempt to assign an identity to another or withhold ,one from him by making it contingent on some specific line of action. This approach to the allocation of situational identities is referred to as altercasting.

Skill at establishing and maintaining desired identities, then, whether for one's self or for others, is pivotal in being interpersonally competent. This skill is dependent in turn upon three other variables. First, the individual must be able to take the role of the other accurately; he must be able to correctly predict the impact that various lines of action will have on the other's definition of the situation. This is what is meant by empathy if we strip the concept of its affective overtones. Second, the individual must possess a large and varied repertoire of lines of action. Third, the individual must possess the intrapersonal resources to be capable of employing effective tactics in situations where they are appropriate.

1. *The Development of Empathy*

Language learning and role learning are basic processes that carry along with them the development of empathic capacity. But beyond such culturally standard training, are there particular socialization practices which facilitate or inhibit accuracy in role taking?

It may be assumed that exposing the child to a breadth and variety of social relationships facilitates the development of general role-taking accuracy. The larger the number of roles encountered by the child, the more he has opportunity to develop an effective vocabulary of social positions and to be sensitive to differences in expectations associated with position occupancy. One of the best ways to improve the capacity to take a given role is to have played it one's self. The greater the variety of social situations encountered by the child, the more will be his first-hand acquaintance with the exigencies of role behavior in such situations. It should be noted that opportunities for breadth in social relationships are not exclusively a matter of parental encouragement. In a very real way, such opportunities are part of the child's life chances and heavily affected by his social class origins. Lower class children are less likely to have the experiences which will facilitate role-taking accuracy, especially with those outside of their class.

Effective development of the ability to put one's self "in the other's shoes" is dependent upon several parental practices. Intimate communicative relations are probably essential. This involves making effective responses, both private and negative, clear to the child so that he can get a more accurate sense of the impact of his acts. Further, parents can actively promote an orientation toward projective role taking. The child can be encouraged to consider the impact of his acts on others by having his attention called to how he would feel or react if he were confronted by similar circumstances. These lessons can come out of episodes in the relationship with the parent or indirectly, when the parent points out the reasons for another's behavior. Still less direct are disciplinary practices which focus on the reasons for behavior rather than the act alone.

In all these cases, the child is learning that others have purposes and feelings as well as he. It should be noted that such "sensitivity training" is much more common as a middle-class child-rearing pattern. Socialization in the lower class tends to focus more on acts than motives, on expression rather than reflection. If the lessons are onesided, if the child is simply asked, "How would you feel?" and then only when he has misbehaved, their effectiveness will be limited. The parent can serve as a role model, pointing out instances in which her acts are being shaped by the probable effects on others, including the child himself.

Some socialization practices may be expected to inhibit role-taking accuracy (empathy). Particularly important are those practices which lead to the development of standards for the self which are vulnerable to recurrent possibilities for invalidation. Lower class children, when confronted with middle-class achievement standards in the school situation, are often in this position. Similarly, the parents of a fairly bright child may do him a disservice by constantly emphasizing his brilliance and their expectations for extraordinary achievement. Constantly faced with these standards, others become evaluators rather than people with feelings and motives. Overly demanding standards for self-performance are met not by questioning one's own performances, but by attacking the validity of others' responses when they fail to confirm these standards.

Authoritarian child rearing may inhibit role-taking accuracy. One likely consequence of authoritarian child rearing is an intolerance for ambiguity. In later life this is likely to lead to an overcommitment to ambiguity-resolving stereotypes, particularly stereotypes about social positions. This commitment is bolstered by a sense of moral imperative so that if a doctor behaves in a way different from the stereotype, the stereotype is not questioned, but the doctor's integrity is.

2. *Acquiring a Repertoire of Tactics*

Interpersonal competence is the ability to control the responses of others. Controlling others starts with the beginning of life, although it is clear the infant is not conscious that his behavior is affecting the responses of others toward him. His primary tactic in getting what he needs from others is simply to communicate the need. He cries. One cannot assume that infants know they are communicating. Just at what point in the developmental process the child can cry voluntarily is unclear. It is at that point, however, that crying becomes the first interpersonal tactic.

As tactics become more self-conscious, they become more and more dependent on an awareness of others' motivations. Such awareness, particularly the explicit recognition of hedonism comes quickly enough, however. Its development comes from increasing skill at projective role taking. It is hastened by the learning of culturally given aphorisms about flattery, fair exchange, and self-interest.

Reciprocity in exchange has its foundations early in socialization. The notion of "my turn" is familiar to some 3-year-olds. It is from such beginnings that the norm of reciprocity and conceptions of fair exchange evolve. Probably peers rather than parents have the major influence in the further development of reciprocity and exchange. The authority and rule based relations in the family are not as conducive to notions of reciprocity among equals as the consensus based morality of peer culture; and the competition for status in the peer group is likely to have a facilitating effect on the transition from tactics of reciprocity to tactics of advantageous exchange.

Advantageous exchange means maximization of outcome in terms of the balance of rewards and costs for the individual. Maximization, in turn, is likeliest when the other's outcome values for various acts of yours are known to you, but your rewards and costs are not known to him. Peer relations provide a good training ground for learning to conceal one's rewards. Others should not know how important it is to you to have a particular baseball card, or that you have a duplicate of the one you are trading. Being too eager can result in the other's demanding higher payment for the resources under his control, so that the ability to keep one's "cool" comes to have tactical value for the child. Smaller children often learn this when they catch on to how older children exploit them. These are precursors of some of the subtler forms of bargaining for situational identities which make for effective control in later life.

Much of adult interaction centers around establishing and maintaining situational identities. Within any given role, one's situational identity can change from encounter to encounter. And, as we have argued, from situational identities flows legitimacy for lines of action and interpersonal tasks. The child learns that the privileges he receives when labelled as a "good boy" are greater than those available to him when he is identified as a "bad boy."

From this he learns that claims to privileges can be legitimized if he can successfully establish the identity of "good boy" in a given encounter with his parents (or promise to maintain that identity in the future). What he can expect to get from others becomes associated with who he can successfully claim to be. The next step is to learn the cues that are to be given off in establishing an identity. Early attempts are quite direct; he overtly claims to be a good boy. Later, he begins to note the particular acts and demeanor associated with the desired identity and starts to embellish his performances with them as in being especially polite for a period before he asks his mother to be allowed to stay up late. Thus are fashioned the masks he needs to don for effective interpersonal control. As development proceeds, the collection of masks (or parts of them) get larger, and subtler uses of shading and coloration are learned. Access to models for the masks is essential. Psychosocial deprivation can take the form of limited access for observing interpersonal tactics which, in turn, limits his subsequent repetoire.

Role modeling plays an increasingly important part in the process as the child becomes aware of the necessity of enhancing the credibility of the masks he wears. Unlike his parents in their relationship to him, the child cannot claim an identity by virtue of authority and have it automatically incorporated as part of the working consensus. His claims are legitimized indirectly by the aptness of his performance, so the techniques of prestigious performers are scrutinized, and tried out experimentally, and incorporated when reinforced.

The sanctions employed by others, the teasing, the statements like "big boys don't do that," made as responses to the child's behavior in the role-learning process, provide another kind of learning. The child begins to sense that he too can adopt such behavior toward others, directing them to assume roles or play roles in ways which will promote his own goals. These are the roots of altercasting, which later develop into a principal technique of interpersonal control. Personal purposes are pursued through casting others in identities with which the desired behavior is consistent or even prescribed.

Modes of pursuing interpersonal tasks through altercasting are quite varied as are the sanctions used to get the other to assume the identity being projected for him. That certain situational identities are to be valued is stressed early by parents. They make it clear to the child that being "awarded" such identities is contingent on conformity to their expectations. The child quickly begins to turn the tables when he employs such tactics as, "A nice mommy would let her son stay up late to watch the TV special."

Many of the techniques of establishing and maintaining situational identities are not learned as tactics nor are they self-consciously employed as such. Rather, they are learned as acts of required tact or politeness. Yet they serve to solve the central problem of interaction—pursuing personal purposes while still keeping the other bound in the relationship. The rules of politeness occupy an important place in the socialization process for this reason. By helping to maintain identities, they serve to preserve enounters. In so doing, they make it easier for people, and the larger social structure, to get their business done.

3. *Personal Orientations and Interpersonal Competence*

Even if the child can accurately take the role of the other, have some conception of the lines of action most likely to evoke the interpersonal task response, and have those lines of action in his repertoire, he still must be free to use them. It is possible for some people to know how to get what they want and still, because of personality factors, be unable to do so. A number of personal tendencies may give or inhibit the freedom to be interpersonally competent. These include:

a. Rigidity, particularly rule boundedness.—The "bureaucratic personality" can be conditioned early in life and extend to areas of life quite apart from organizational roles. It might develop from over emphasis by parents on prescriptions and proscriptions as the core of role learning. The child is reinforced for hyperconformity. Deviations are only permitted when they can be legitimized by highly legalistic rationales. In socialization of this type, the child is given little opportunity or encouragement to test limits or explore the boundaries of working consenses. The generalization he learns is that there is safety within the normatively circumscribed and structured boundaries of roles. The net result is a reluctance to use lines of action not immediately implied by the role. Effectiveness is sacrified when innovation is called for. Rigidity in certain aspects of one's self-concept may interfere with competence in a similar way to role rigidity.

b. Alienation.—One would expect persons who are alienated to have low motivation for interpersonal competence. Seeing the world and those in it as unfair and unconcerned except as their own interests are involved promotes the expectation of failure, so why try?

c. External and internal control.—Ascribing consequences to forces outside one's control and independent of one's activities (external locus of control) tends to be associated with seeing success as unpredictable and hence motivation for achievement through interpersonal control is apt to be reduced.

d. Costs of failure.—The psychological costs of failure may differ considerably among individuals. When failure weighs heavily for the individual, many desired responses from others do not become interpersonal tasks. The costs of trying and not succeeding so exceed the costs of deprivation that extremely high success probabilities are needed to overcome this cost threshold level. Failure avoidance rather than success maximization becomes the dominant orientation. It functions to reduce flexibility in the kinds of interpersonal tasks one will risk bargaining for and the kinds of lines of action one will risk using in the bargaining process.

e. Low esteem.—Orientation toward failure avoidance is likely to be low self esteem, a characteristic which has been reviewed by Cooper-Smith (1968). Studies of social class differences in socialization practices and studies of class attitudes indicate that each of the limiting conditions described, from limitations on social experiences to attitudes of external locus of control and alienation, are characteristics of the lower class. Clearly lower class socialization is not conductive to the acquisition of interpersonal skills applicable to a wide variety of social contexts. Yet it is precisely such skills that are important for mobility in our contemporary society. Educational mobility, given the rewards for technological skills, can compensate for some of the effects of psychosocial deprivation on mobility, but hardly all of them. If mass mobility out of the lower class is an appropriate social goal, some way of compensating for the effects of deprivation on interpersonal skills must be found.

Temperament and Behavior in Relation to Psychosocial Deprivation

In the various attributes of personality considered in detail in relation to psychosocial deprivation, we have examined environmental factors that influence and modify the development of a particular attribute and have looked especially at whether being in a disadvantaged position in the society has deleterious consequences for the social and emotional development of the child.

A different viewpoint has been generally adopted when examining temperamental differences in children. Research has focused on the influence of temperament on emotional-social development. Little attention has been given to the question of whether differential environment experiences over time modify temperament.

As with ability and motivation, an individual's temperament is not immutable. Like any other characteristics of the organism, its features can undergo a developmental course that will be significantly affected by environmental circumstances. In this respect temperament is not different from height, intellectual competence, or any other characteristic of the individual and, as in the case for all such characteristics, the initially identified pattern in the young child may be relatively unchanged by environmental influence, or it may be reinforced or heightened, diminished or otherwise modified during the developmental course. As thus categorized, temperament is a phenomenologic term with no inferences as to genetic, somathologic, endocrine, or environmental etiologies. It describes the characteristic tempo, rhythmicity, energy expenditure, mood, and focus of attention of a child, independently of any content of any specific behavior.

Temperament could equally well have been considered by the task force considering biological factors that influence behavior. It is useful to keep it within this task force as a strong reminder of the powerful biosocial interactions that must be considered in a full understanding of psychosocial deprivation.

1. *Definition and Characteristics of Temperament*

Temperament may best be viewed as a general term referring to the *how* of behavior. It differs from ability, which is concerned with the *what* and *how well* of behavior, and from motivation which seeks to account for *why* a person does what he is doing.

A number of workers have reported individual differences in reactive characteristics in various specific areas of functioning, such as motility, perceptual responses, sleeping and feeding patterns, quality and intensity of emotional tone, social responsiveness, etc. These studies have, in general, emphasized that such individual differences appear to be intrinsic and not determined by postnatal experience.

Thomas and his associate have found it possible to reliably identify nine categories of temperament at various age periods. These nine categories are: (a) Activity Level, (b) Rhythmicity (Regularity), (c) Approach or Withdrawal, (d) Adaptability, (e) Theshold of Responsiveness, (f) Intensity of Reaction, (g) Quality of Mood, (h) Distractibility, (i) Attention Span and Persistence. In addition, a number of temperamental constellations have been defined, including the following: (a) the easy child: comprising regularity, positive approach to new stimuli, high adaptability to change, and proponderance of positive mood of mild or moderate intensity, (b) the difficult child: irregular in daily patterns of feeding, sleeping, etc., having a negative approach to new stimuli, prolonged adjustment to new routines, and intensity of response, (c) the slow-to-warm-up child: showing negative responses of mild intensity to new stimuli, slow adaptability to change, but without the irregularity of function, negative mood and intense reactions of the difficult child.

2. *Research Findings and Their Relationship to Psychosocial Deprivation*

The findings of Thomas et al. (1968) using children from largely middle- and upper-class families indicate that, given constancy of environmental factors, the outcome will vary with the characteristics of the child upon whom the relatively constant stimulus is brought to bear. This holds true for all aspects of the child's functioning: including the responses to specific child-care practices, parental attitudes, social and learning demands, and the reactions to situations of special stress, such as illness, radical changes in family structure, living conditions, or marked shifts in geographic environment. These findings call into question the assumption that environmental factors are the sole determinative influences on the child's behavior and psychological development. Rather, it would appear that any individual child's response to any situation will be determined by the interaction between the child's own pattern of reactivity and his environment.

Such a basic child-environment interactive process has been evident in those children in the study population with development behavior disorders of various types and severity as well as in the children whose developmental course was normal. In addition, the attitudes and responses of parents, teachers, siblings, and peers to a child appeared to be determined not only by their preexisting psychological characteristics, but also by reactions invoked in them by the specific temperamental characteristics of the child.

Of special interest for the question of the influence of variation in temperament as a factor generating psychosocial deprivation has been our observations on the nature of the teacher's reactions to individual children's temperamental attributes. A number of possibilities can be cited, based on specific case material from the longitudinal study and from related investigators.

A slow-to-warm-up child (i.e., with negative responses of mild intensity to new stimuli and slow adaptability on repeated contact) may impress a teacher as timid or lacking interest in school. If the teacher then pressures the child for a tempo of adaptability and involvement with the group which is dissonant with the child's temperament, the typical result is an intensification of the child's negative responses and even actual withdrawal. If, on the contrary, the teacher recognizes the child's behavior as normal for him and patiently allows him to adapt and involve himself at a tempo appropriate to him, the child will finally become an active and fully involved member of the group.

Another child also has negative responses to new stimuli with slow adaptability after repeated contact. But in contrast to the slow-to-warm-up youngster, he reacts with high intensity. His withdrawal is not quiet; he does not present the picture of the shy child. Rather his reactions tend to be disruptive and to interfere with the work of others. This temperamental pattern produces the greatest risk of behavioral problem development in the classroom. Frustration characteristically produces violent tantrums. The child may become angry at the task which he cannot master quickly, and may feel discriminated against by teachers who demand preformance on such tasks. Now learning procedures may fill him with dismay. However, once he does learn the rules, or becomes familiar with the task, he tends to function easily, consistently, and energetically. The risk period occurs during the adaptation period. Teachers not infrequently tend to single out such children for punishment. Anticipating trouble, teachers may be more peremptory with them, thus adding to their adaptive stresses.

A child with easy distractibility and short attention span may also have difficulty in school because he typically learns by fits and starts. In the lower grades, where lessons are brief, the short attention span may be adequate. In the higher grades, demands for longer uninterrupted periods of concentration may be beyond his capacity. If this is not recognized as an issue of temperament, excessive demands may be made on the child, with consequent anxiety or negativism, or both. By contrast, a persistent, nondistractible child may have no difficulty in sustaining long periods of attention to his work. Problems may arise for such a child, however, if the teacher repeatedly demands quick and complete shifts in his focus of attention and interest.

The child with a high activity level may also develop school difficulties if the teacher misinterprets his squirming and wiggling as inattention or willful disobedience.

Several children in the longitudinal study with the slow-to-warm-up temperamental pattern were misjudged by their teachers to be of lower intellectural level than they actually were. This finding suggested that a tendency might exist for some teachers to confuse the temperamental issue of the quality of participation in new situations with the issue of intellectual level. This hypothesis was explored systematically through a study of another group of children in a suburban school system. Ninety-three children were rated by their teachers as to their pattern of participation in new activities and situations. The teachers also made a judgment of the children's intelligence. The findings have been reported elsewhere and can be summarized briefly here: the children who plunged quickly into new situations and activities positively and unhesitantly were likely to be judged more intelligent by their teacher than the slow-to-warm-up children, even when the two kinds of children were of the same measured intelligence. There was also a tendency for the teacher to overestimate the intellectual level of the child who involved himself quickly in new activities and to underestimate the intellectual level of the child who became involved slowly and gradually. Inasmuch as a teacher's estimate of the child's intelligence can influence her expectancies and demands and the child's responses to these expectancies, a bias introduced by the misinterpretation of temperamental characteristics can have significant consequences for a child's academic achievement and school functioning.

Differences in temperament may in part account for the results of a study conducted by Schaffer (1966) on the effects of hospitalization for at least 7 weeks on infants ranging in age from 1 to 29 weeks of age. All infants were adjudged to be completely recovered at time of discharge. The mean developmental quotient of the infants at the end of hospitalization was approximately 85, but it rose to 95 within 18 days after their return home and showed no further rise after 3 months. Schaffer interpreted this as indicating that the quotients had returned to their predeprivation levels. When these changes were related to ratings of activity level made on the infants while in the hospital, it was found that the infants who showed the greatest rise (i.e., those who had presumably shown the sharpest drop in the hospital) were those who had been least active during their hospitalization. The two infants given ratings indicating high activity level had both shown a slight decline in test score. Schaffer suggests that DQ rise following alleviation of deprivation may serve as an indicator of vulnerability to deprivation and that indicators such as activity level during deprivation may give some indication of potential resistance to environmental stress.

Stigma as a Factor in Social Interaction

The social and psychological implications of stigma conditions have received increasing theoretical and experimental attention from investigators in the behavioral sciences in the last decade. This research has already made important contributions to the analysis of human development and social interaction (cf. Wright, 1960). As an area of investigation which is in its early stages of development, however, it is yet more distinguished by its promise than by its achievements.

1. *The Notion of Stigma*

The term "stigma" has been used in recent sociological (Goffman, 1963), social psychological (Kleck et al., 1966), and anthropological (Gussow and Tracy, 1968) literature to refer to any attribute of persons which discredits the possessor in some way. A wide range of personal characteristics may distinguish persons who are different from others in an "undesirable" way. These may include: (a) any form of functional impairment whether congenital or acquired, e.g., physical handicap, mental retardation, sensory defects such as blindness or deafness, or certain patterns of temperament; (b) distinguishing biological characteristics where there is not necessarily functional impairment, e.g., color, ugliness, obesity, small stature, facial disfigurement; (c) personal and social characteristics such as aberrations of behavior or personality, race, religion, or nationality if it is negatively valued by the society in which they live.

A growing body of research is focused on the social-emotional outcomes experienced by persons with stigma conditions. Considerable evidence has already accumulated suggesting that the stigmatized individual may experience outcomes from his environment which have potentially negative implications for his subsequent development. Central among these outcomes is the "reactive" behavior which the stigmatized individual elicits from the nonstigmatized persons with whom he interacts. The possible sources of this reactivity are numerous. In the first place, for most "normals", interactions with stigmatized individuals are relatively infrequent events. Interaction norms therefore have little opportunity to develop, and both the stigmatized and the nonstigmatized individual may be uncertain as to what behaviors are appropriate to the interaction. Such interaction uncertainty and uneasiness have obvious negative implications and have been labeled "interaction pathology" by Goffman (1957, 1963). In the second place, the stigmatized individual is, by definition, not accorded acceptance in most interactions. The characteristic which makes him inferior to the normal in one dimension (e.g., inability to perform certain motor acts such as walking or possessing a dark skin) is very often extended to all dimensions of his person such that he is considered generally inferior. This factor of lack of social acceptance may be further complicated by the tendency on the part of the stigmatized individual to accept as valid the definition of self projected upon him by his social environment (cf. Richardson et al., 1961).

Interactional uncertainty and lack of social acceptance are not the only factors that have been suggested to account for the reactive behavior of normals. The personality dynamics of the normal interactant (Genskow and Maglione, 1965), the "stigma theory" developed by normals in regard to a particular stigma condition (Goffman, 1963), and social-class background (Dow, 1965), are just a few of the variables implicated in this regard. The important point, then, is that there are clear reasons to expect that those persons who Goffman characterizes as stigmatized may elicit from their nonstigmatized social environment patterns of behavior and treatment which interfere with their optimum social-emotional development.

2. *Research Relevant to the Effects of Stigma Conditions on Social Interaction*

A general assumption for many social psychologists is that "how an individual views his world and acts toward it can be understood in great measure through (his) attitudes" (Hollander, 1967). Given the amount of research on attitudes toward stigmatized persons it is apparent that many persons working in this area make a similar assumption. The research to date can be easily catalogued according to the attitude object (e.g., racial characteristics, physical disability, alcoholics, etc.) and according to the antecedent or correlative variables under investigation (e.g., social class, personality type, self-concept, etc.). Only one aspect of the analysis of attitudes toward stigmatized individuals will be reviewed here to give some notion of the direction this research is taking.

A number of studies have examined the relationship between contact with a given category of stigmatized individuals and changes in attitude toward them. In a study of integrated housing, Deutsch and Collins (1951) found that degree of contact was related positively to favorableness of attitude toward the Negro. The contact hypothesis has also been tested by a number of investigators vis-a-vis the stigma of physical disability.

These studies (Bateman, 1962; Siller, 1962; Cowden et al, 1958; Richardson et al., 1961) are not consistent in supporting the hypothesis that increasing contact will result in increasing acceptance. The inconsistency can be accounted for in a number of ways. Central among these is that type of contact is undoubtedly more important to subsequent attitude development than is *quantity* of contact. In the case of physical disability, for example, if one looks only at those studies which have defined the nature of the contact represented in their subject samples, then close social and personal contact appears to result in greater acceptance (Yuker et al., 1966). Contact in a medical or rehabilitative setting, on the other hand, is not clearly related to increasing acceptance (Felty, 1965). Yuker et al. (1966) have suggested that in examining the effects of contact on attitudes, one must determine the nature of the information exchange that is likely to take place between the disabled and the nondisabled. A medical or rehabilitation setting, for example, probably increases the likelihood that what will be transmitted is information concerning the inadequacies rather than the capabilities of the stigmatized individual.

A number of investigators have begun to look at the nature of the behavioral exchange which takes place when the stigmatized interact with the nonstigmatized. Kleck has examined several dimensions of the behavior elicited from physically normal individuals by physically stigmatized ones. In these experiments a physical disability was simulated, by a confederate of the experimenter, through the use of a specially constructed wheel chair which allowed the same person to play the role of a physically normal person or a left leg amputee. A central finding of the research to date is that the behavior produced by a physically normal person, when interacting with the stigmatized confederate, shows certain distinct behavioral biases. Kleck, Ono, and Hastorf (1966), for example, found that persons interacting with a physically stigmatized other, when compared to a control group of persons interacting with a physically normal other in the same situation, terminated the interaction sooner, demonstrated less variability in their verbal behavior, and expressed opinions which were less representative of their actual beliefs. Kleck (1968) extended this analysis to the nonverbal dimensions of behavior and found that normal-disabled interactions were characterized by a general inhibition of gestural activity but not by an expected avoidance of eye contact. This second study replicated the opinion distortion results found in the previous experiment and supported an observation made by Barker et al. (1953) that when asked to form impressions of disabled and nondisabled persons, individuals consistently report more favorable impressions of the former. Two more recent studies (Kleck, 1969; Kleck et al., 1968) have found that normals tend to employ greater personal space in interacting with physically disabled individuals than is the case when the interactant is nondisabled.

These "reactive" behaviors have been observed in the early phases of interaction in which the interactants have had little or no prior experience with one another. It is an important question as to whether these behavioral biases characterize longer term interactions, particularly those involving the primary socializing agents. A few studies have examined the behavior of mothers and teachers toward stigmatized children and provide data on this point. In a relatively early study, Shere (1954) analyzed the parent-child interactions of 30 pairs of twins in which one of the twins had cerebral palsy.

While the results demonstrated that parents behaved differently toward the stigmatized than toward the normal children, this difference was limited to certain specifiable aspects of the parent-child relationship. In general, the parents tended to over protect the cerebral palsied twin and to give him little responsibility within the network of family activities. At the same time they tended to interact with the disabled twin with less apparent tension and were more aware of his problems than was the case for his nondisabled peer. A more recent study, employing the ecological methods developed by Barker and Wright (1955) has not supported the notion of differential treatment of stigmatized children by their parents and teachers. Schoggen (1965) collected extensive specimen records on seven matched pairs of children with motor disabilities and nondisabled children in the home and in school. He found no significant differences between disabled and nondisabled on any of the variables studied, which included measures of the amount of time the teacher or parent spent with the child, frequency of help given, and the amount of interpersonal conflict. A limitation of this study is that the results could in part be the function of the physical presence of an observer, which is a necessary limitation of the collection of detailed specimen records. In spite of this it does suggest that "differential treatment of children with disabilities by their mothers and teachers in everday life cannot be assumed" (Schoggan, 1965, p. 1).

There has also been a concern with the reactive behavior of the stigmatized or deviant individual when he confronts the normal. Freedman and Doob (1968) have attempted to study the effects of deviancy *per se* without regard to the particular characteristic which defines this deviancy. To achieve this, they have produced feelings of deviancy in individuals by an experimental manipulation and have compared the behavior of this group with a group of persons who have not been made to feel deviant. By approaching the problem in this way they "hoped to investigate the effect of deviancy on behavior in a relatively well-controlled environment from which contaminating factors * * * were removed." The manipulation was one in which all subjects completed a complex personality inventory, and subsequently the "deviants" were told that on the basis of the test results they were "quite different from others." No explicit negative or positive evaluation was given to the feedback of being different. The major findings of this research are summarized in the following conclusions:

a. When compliance pressure is directly exerted on the person who feels deviant he tends to comply more than the person who does not feel deviant. This is particularly true when the person making the request is seen as being nondeviant.

b. When a person who does not have feelings of deviancy is asked to choose someone to receive electric shock he chooses deviants over nondeviants. When choosing someone to receive a reward this pattern of choice is reversed.

c. Persons with feelings of deviancy, but for whom their deviancy is not public knowledge, tend to avoid social contact with others.

d. Persons with feelings of deviancy prefer to associate with other individuals identified as deviant rather than with nondeviants.

It must be remembered that these results are specific to a given method of manipulating feelings of being different from one's associates. It is unknown at this time what the relationships are between these manipulated feelings of deviancy and those presumed to occur in those individuals who are stigmatized in some particular way. The authors suggest that studies of the "naturally" stigmatized are necessary to assess if the kinds of situations employed in this research do in fact produce similar effects.

The fourth general finding reported above does appear to have received some cross validation from studies of stigmatized individuals in natural settings. That is, stigmatized persons have been observed to seek each other out and to associate with persons stigmatized in similar ways. Weinberg (1968) has documented, for example, how dwarfs and midgets are able to alleviate some of the problems faced by persons possessing this particular stigma condition by coming together in social groups. The organization which midgets and dwarfs have created is called the Little People of America (L.P.A.) and is nationwide. While it offers direct positive outcomes (e.g., exposing the participants to a larger group of potential marriage partners than he would encounter outside this group), it also provides the possibility of engaging in "destigmatization." The organization accomplishes this in part by increasing the medical knowledge of the general public regarding little people, and by attacking the social barriers and discrimination which these persons encounter.

A similar pattern of behavior has been observed by Gussow and Tracy (1968) to characterize persons suffering from the stigma of leprosy. These authors note that one method employed by this group, in an attempt to destigmatize themselves, is to develop a "stigma theory," that is, an ideology to "counter the ones that discredit them, theories that would explain or legitimize their social condition, that would attempt to disavow their imputed inferiority." The basic assumption in the stigma theory developed by the group of leprosy patients studied by Gussow and Tracy was that "ostracism and rejection will be appreciably diminished and perhaps totally disappear when social misconceptions (regarding leprosy) are corrected." The stigma theory is transmitted to the nonstigmatized public by what the authors call the "career patient," that is, by persons who are willing to risk exposure to others. Cummings and Cummings (1965) have noted that stigma theories tend also to operate in groups of the mentally ill and serve similarly as attempts to destigmatize the individual both in the eyes of others and in his own eyes.

A relatively recent development in the social psychological analysis of the effects of stigma conditions has been the search for biased or reactive patterns of behavior on the part of normals when interacting with stigmatized others. To date, this research has been limited in the types of stigma conditions examined, in the narrow range of contexts employed in the experiments, and in the very short time period over which behavior has been observed. Research by Rosenthal and Jacobson (1968) serves as an important corrective to this last limitation. At the beginning of the school year, the authors gave each of eighteen elementary school teachers the names of children in her classroom who might be expected "to show dramatic intellectual growth." These expectations were supposedly derived from careful testing, though in actual fact the children were chosen randomly. All children were retested after one, two, and four semesters. During the last two of these semesters they were no longer in contact with the teacher holding a favorable expectation with regard to their intellectual potential. The effect of the expectancy was measured by the actual IQ gains experienced by the "special children compared to a group of matched controls from the same classes. At the end of 1 year a significant expectancy effect was found, with 47 percent of the special children showing a gain of 20 or more IQ points while only 19 percent of the control group made similar gains. At the end of 2 years, the difference between control and special children had increased for the older individuals in the sample, while the younger children had lost their "expectancy" advantage. The mechanisms by which the teacher's anticipation mediated the differential IQ gains are not clearly understood, though the authors make numerous suggestions in this regard (pp. 178–181).

The suggestions implicit in these results for further research on stigma are several. It was for ethical reasons that Rosenthal and Jacobson chose to examine the effects of a positive teacher expectancy on subsequent intellectual development, but there is every reason to anticipate that a negative expectation would be equally, if not more, potent as a determinant of behavior. Low teacher expectancies vis-a-vis the physically disabled, the mentally retarded, or the racially different, may constitute highly negative self-fulfilling prophecies. The conditions under which they do act in this way, the kinds of social contexts which promote or retard the operation of expectancies, and the ways in which the negative aspects of such expectancies can be reversed, are all in need of careful research attention.

Thomas (see page 47) has shown that particular patterns of temperament exhibited by children may become objects of stigma. Teachers judged slow-to-warm-up children as being less intelligent than children who plunged quickly into new activities even when the two kinds of children were of the same measured intelligence. This suggests stigma spread from less-liked manifestation of temperament to intellectual performance.

Gerard and Raven in their report for this Task Force cite an intensive, longitudinal study of school desegregation in which as the minority child progresses through the grades, he develops a more and more deeply ingrained deficit in self-evaluation that is coincident with the majority stereotype of him. Other data from the same study indicate that a number of achievement-related attitudes are closely correlated with this self-evaluation deficit. These results suggest presence of stigma in the schools and may be seen as children's responses to stigma.

The primary emphasis on academic achievement in the schools, which is a value largely supported in our overall society, may make it extremely difficult for a child not to feel a general failure if he does poorly in academic work. Again it is an easy step to take in stigma spread from school incompetence to overall incompetence for both adults and children.

Maternal Deprivation and Lack of Early Stimulation in Infancy

There has unfortunately been more speculation than investigation into the effects of psychosocial deprivation on the human infant. Much of the early work done in the area owes its impetus to the reports of Spitz (1945, 1947), who launched what might be called the "maternal deprivation decade." He reported that infants who were abruptly separated from their mothers often went into a state of depression and showed a sharp decline in cognitive functioning. Implicit in this work was the importance of the emotional relationship existing between mother and infant. The Spitz studies appeared to catalyze worldwide interest in the subject which was reflected in Bowlby's monograph (1952) summarizing the literature and focusing on the affective component of behavior.

A number of careful analyses of empirical studies (see especially Yarrow, 1961, 1964; and Ainsworth, 1962) of maternal deprivation pointed out some flaws in design. At about the same time studies shifted in emphasis to the examination of various forms of perceptual deprivation in infancy—auditory, visual, kinesthetic and vestibular and the developmental concerns shifted largely from social-emotional to cognitive. The publication of *Intelligence and Experience* by Hunt (1961) organized a wealth of evidence relating to the effects of experience on intelligence.

With human subjects, one cannot point to a truly experimental study that involves deprivation. The only pattern ethically open to the investigator is to try to reverse deprivation—i.e., to enrich—and then to examine the effects. The earliest important study of this nature was that of Skeels and Dye (1939). Briefly, these authors transferred a few young children who were showing retarded development in an orphanage to an institution for the mentally retarded. In this new environment, hardly one likely to be thought of as enriching, the infants were cared for by adolescent and young adult mentally retarded girls. Instead of being one of many infants having to share the scanty amount of adult attention available in the orphanage, the children were now cynosures in a population probably starved for small, dependent creatures in need of love and attention. Most of the children, after receiving even this distorted brand of enrichment, soon became adoptable and, when found and studied some 30 years later, were found to have been able to maintain themselves in the community and to have produced offspring that functioned within the normal range. By contrast a comparison set of children who had remained in the orphanage and did not receive the experiences in the institution for the mentally retarded were 30 years later still mainly not economically independent and many were still in some form of institutional care. This is probably the only long-term followup study of enrichment. It does not, of course, identify the specific outcome of the two sets of children, but is highly suggestive of directions for further study.

Bronfenbrenner (1968) in a comprehensive review of "Early Deprivation in Mammals and Man" makes the valuable distinction between consequences stemming from early stimulus deprivation and consequences stemming from the frustration of an established dependency drive between an infant and a person who satisfies his oral and dependency drive. The following brief extracts are from his summary in which he considers the applicability for man of hypotheses derived from research in mammals. The full summary deserves careful study and the following selected hypotheses can only give a flavor of the review.

> 1. Early drive deprivation leads to increased drive level later in life, both in general and particularly in relation to the specific need previously deprived.
>
> 2. The intensity of the effect produced by drive deprivation is a joint function of the developmental stage of the organism, the degree of deprivation, and the strength of the drive at the time of deprivation.
>
> 3. The increased drive level produced by early drive deprivation can have a disorganizing or facilitating impact on the development of a particular form of behavior depending on the developmental stage of the given behavior pattern at the time of deprivation. If deprivation occurs before a particular behavior pattern has been fully developed, the effect of increased drive level is to disrupt the further development of the pattern and impair its expression and efficiency in later life. If deprivation occurs after the particular behavior pattern has been established, the effect of heightened drive level is to enhance the frequency and efficiency of that behavior pattern in situations in which it leads to gratification of the original drive.

All three of the foregoing hypotheses find strong confirmation from research on oral and dependency drive in human subjects. Specifically the effect of drive deprivation early in infancy, before the sucking and dependency needs are fully developed, is to weaken the strength and efficiency of drive related behaviors. For example, children deprived of human contact for extended periods, beginning in the first 6 months of life, show subsequent lack of ability to form close emotional attachments. Conversely, frustration of oral or dependency drives in middle infancy evokes strong disturbance followed by increased oral activity or concern over attachment to others.

4. If general stimulus deprivation is introduced in *early infancy* and continued into later stages, serious disturbances and deficits result which become permanently disabling if isolation is maintained through both middle and later infancy, the periods of changing mother-infant and peer interaction and feedback.

5. If the infant is first subjected to general stimulus restriction in *middle infancy*, the period of strongest attachment to the mother, he suffers the joint effects of stimulus deprivation and frustration of dependency drive.

6. If the infant is subjected to general stimulus restriction in *late infancy*, after he has been weaned but while he is adapting to the changing pattern of mother-infant interaction, the effects of deprivation are similar to but not so extreme as those produced by continuous isolation from early infancy. The possibilities for recovery are greater than those for animals isolated continually from early or middle infancy onward.

The evidence from humans gives strong support for each of the foregoing three propositions. In particular the data support the prediction of differential impact of deprivation in early, middle, and late infancy both with respect to immediate effects and potential for recovery. At the same time, several qualifications are in order: (a) There is no evidence that the debilitating effects produced by early deprivation of the type encountered in institutions are irreversible; (b) The fact that children so deprived eventually achieve normal levels of personality functioning does not mean, however, that they realize their full potential in the intellectual, emotional, or social sphere. In the absence of adequate research evidence, the question remains an open one; (c) The stimulus deprivation which children experience in some institutions, though serious, is far from complete insofar as there is some daily contact with caretakers and, subsequently, with other children. Were such contact eliminated, it appears highly probable that permanent, severe damage would result, provided, that is, that the child survived; (d) Although the available research evidence points to reciprocal interaction between mother and child as critical to psychological development in infancy, there are as yet no studies of maternal behavior in humans, paralleling those available for lower mammals, which document the changing pattern of mother-infant interaction over time and the relation of this changing pattern to effects of early deprivation. Such studies are badly needed.

Kagan (in press) examines early stimulation in infancy and its effects on cognitive development. He seeks to minimize the importance of the absolute amount of stimulation the child receives and spotlights instead the distinctiveness of that stimulation. He suggests that visual support and vocalization are the most salient reactions for the infant and the importance of the consistency of the facial stimulus for the infant and reciprocal vocalization with positive reinforcement of the infant's vocalizations. Reviewing some studies he concludes * * * "The middle-class daughter seems to receive more distinctive vocalization from her mother than both the lower class girl or any son and, as many studies have shown, has the most precocious language development of any category of child."

Hartup, in his review of the development of affection and dependence, suggests that the heavy emphasis on early infancy in studies of the effects of separation from an attachment object or of general restriction on social contacts should not diminish concern for the consequences of separation for older children and adolescents. There is growing speculation that they are also vulnerable to such loss.

Deprivation in Relation to Social Intervention and the Evaluation of Change Efforts

This final section of the research reviews is focused on concepts, issues, and problems which have emerged from approaches to intervention and change, and from evaluation research on those efforts. Such work has illuminated understanding of psychosocial deprivation as well as contributing to knowledge about its amelioration.

Bronfenbrenner in his paper "Effects of Social Intervention on Psychological Development" suggests five major forces that can facilitate a child's development. In summary these are:

1. *Potency of Models*

This concept includes placing the child in an environment in which he is exposed to models exhibiting desired behavior patterns at a level the child can emulate with some degree of success.

2. *Social Reinforcement*

This strategy uses the child's own behavior as a model to be improved upon. This is done by giving affection, approval, or providing some other gratifying experience when the child exhibits the desired behavior. In this way it is possible to increase the frequency and precision of that behavior.

3. *Intensive Relationships*

In both modeling and social reinforcement the most potent agent for each of these processes were persons with whom the child has developed intensive and enduring relationships.

4. *Group Faces*

There are two ways to effect a change in the behavior of persons in the child's environment. The first, and clearly the more difficult, is to try to modify the actions of those who constitute the principal figures in the child's world as it already exists. The second, is to introduce into that environment people who can serve as appropriate models and reinforcers, and who stand some chance of being able to develop an enduring intensive relationship with the child.

5. *Superordinate Goals*

To involve persons actually or potentially important to the child in pursuit of a superordinate goal which can have the effect of maximizing the incidence and inductive power of constructive behavior and motives while reducing disruptive and negative influences.

These five concepts which, according to Bronfenbrenner, can be used as techniques for social change in child development and, especially, in assisting disadvantaged children, emphasize the importance of the need for a positive affective relationship between the child and those that are influential to him. The first three concepts constitute recurrent themes in the various review papers for this task force. The last two, Group Forces and Superordinate Goals, are not dealt with elsewhere and deserve further attention. The reader is referred to Bronfenbrenner's paper for the research basis from which his five concepts are derived. He considers the major contexts in which the child lives—the classroom, school, family, neighborhood, and the larger community.[3] For each of these he makes suggestions about how the concepts may be applied at the level of social action, and the forms of research evaluation needed. The following summarizes the elements which he believes need to be represented in an experimental intervention program in addition to the more traditional elements.

1. Provision for family involvement in activities of the program in school, in the neighborhood center, and in the home, with emphasis on direct interaction with the child and on the strengthening of enduring emotional ties between the child and the members of his family.

2. Under appropriate supervision, utilization of older children, both as individuals and groups, in activities with younger children both within and outside of school. Such activities might include reading to children, escorting them on outings, playing games, tutoring, sports, etc. In the course of these activities, the development of friendships between older and younger children should be encouraged.

3. Within the classroom and other children's groups, taking advantage of possibilities for heterogeneous groupings, arrangements for mutual aid, and group recognition and approval.

4. Establishing programs at the level of the school rather than the isolated classroom so as to be able to involve the entire school community—other pupils, staff members, administrators, etc., as participants and supporters of those most actively engaged in the program, especially the children themselves.

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[3] A somewhat wider range of environmental forces is suggested by Passow (1963) who suggests that we can "view the young learner as the bull's eye of a series of concentric forces which influence his attainment" * * * (1) the *child*, (2) the *family*, (3) the *neighborhood*, (4) the *school* and *classroom*, (5) *community agencies* and *institutions*, (6) *city* and larger *metropolitan* area, *and* (7) larger *regional*, *national*, and *international* systems.

5. Bringing in persons from the child's own neighborhood, as well as from other segments of the community who, by demonstrating their competence and concern, can present the child with appropriate models to emulate.

6. In general, employing the superordinate goal of concern for young children as a means for involving the entire community in an examination of the opportunities it offers to its children and of the ways in which these opportunities can be enhanced and extended to all children and their families.

For a detailed review of suggestions for needed forms of intervention and research the reader is referred to the Bronfenbrenner paper.

Throughout the task force papers it is apparent that there is a wide range of good evidence which can form the basis for planning social action and also large areas where the state of knowledge is little beyond the realm of good common sense and imaginative speculation. Acting on partial knowledge is a state of affairs with which the physician lives on a daily basis and often he must use such partial knowledge in making decisions which may have life and death consequences. The behavioral scientist so far has had relatively little experience in combining roles of scientist and participant in social action. Primarily, he has been involved in teaching and research while social action has been more in the hands of educators, social workers, recreation, and welfare workers.

There is urgent need for closer mutual understanding between those with heuristic and action orientations, and each has a great deal to learn from the other. At the national level there is a need to encourage this mutual educational process and the establishment of combined teams who can assist in the evaluation of current knowledge, its application to social action, and exploitation of every opportunity for evaluation research to be built into and be a part of action programs.

Issues of social and biological development are related so intimately, that scientists interested in biological development should be included in the bringing together of knowledge and action in a manner to maximize the effectiveness of action and learn from the results. Only in this way can many of the complex problems be dealt with that are encompassed by the broad definition of health used by the World Health Organization—"Health is a state of complete physical, mental, and social well being, and not merely the absence of disease or infirmity."

The encouragement of mutual education and understanding between those with a primary interest in research and those with a primary interest in social action can assist in overcoming some of the difficulties which have been encountered. Gerard and Raven have called attention to some of these difficulties:

1. Often directors of intervention programs are not by nature methodologically oriented and not sophisticated in measurement techniques and therefore resist systematic evaluation.

2. They are often so concerned about getting the program under way that they do not feel they can invest the time before the program starts in getting necessary premeasures. Postmeasurers, in and of themselves, are not adequate.

3. Directors are often so convinced as to the obvious value of their brand of intervention that they feel any evaluative measures would be superfluous.

4. There is often the feeling that evaluative measures will have negative effects upon the staff, leading them to be more conservative in their actions, or more inhibited and restricted in their actions.

5. The persons with respect to whom intervention is attempted are often reluctant to be evaluated. Persons in poverty areas have become negatively oriented toward questionnaires and, it is said, they now want action not experiment.

6. Persons in charge of intervention techniques may be insecure about the success of their program and are worried that evaluative measures will reflect negatively upon them and upon their staffs.

7. Both the persons upon whom intervention is attempted and the organizations (school, communities) are concerned that the premeasures will reflect negatively upon them and will therefore make possible invidious comparisons with other persons, groups, or organizations.

8. The author of a program may also believe that short-term evaluation will not show the ultimate effects of the programs (Brooks, 1965).

9. In addition to the above, the problems of making a careful evaluation in field situations are enormous and sometimes completely impossible—at least, in terms of meeting usual scientific criteria.

The need for evaluation is clear. Time, talent, and other resources can no longer be wasted on ill-planned, nontheoretically based, nonevaluated intervention programs when it seems more crucial than ever that we begin to move in appropriate directions with a minimum of waste motion. Some may argue that an evaluation diverts money and talent and therefore represents waste motion. But this is a "penny-wise, pound-foolish" attitude; it is essential that the success or lack of success of a program be known in order to provide a benchmark for future program policy decisions. Part of the skills of both the social scientists and practitioners must then be devoted to research and evaluation in field settings. Donald T. Campbell and his coworkers have already contributed greatly toward the development and implementation of such devices (Webb, Campbell et al., 1966; Campbell, 1963; Campbell and Stanley, 1963; Campbell, in press). Considerable effort must be devoted to convincing intervention specialists to accept evaluation as a necessary part of developing truly successful intervention (Lippitt, Watson, and Weatle, 1958; Brooks, 1965; Freeman and Sherwood, 1965).

Gerard and Raven review some of the Compensatory Education Projects whose aim it is to remedy specific educational deficits at widely differing age levels. The reader is referred to their review for details.

Teachers are almost the only socialization agents of children, in addition to parents, who have been empowered at all levels of society to engage in the education of children. Research findings are accumulating, some of which have been referred to in this review, about the kinds of influence teachers may have on the self-esteem, motivation, and other personality attributes of children. These in turn, influence schoolwork and other forms of intellectual and social development. Further detailed studies are urgently needed and their results should be considered in the training and education of teachers. Thomas (1968) recommends, for example, that teachers should be sensitized to different patterns of temperament and ways of best dealing with forms of temperament which may, if unrecognized, be reacted to by teachers as though they are signs of stigma. Because teachers have long been one of the society's primary agents for socialization, they are frequently overloaded with responsibilities. There is need for carefully evaluated social innovation in developing additional socialization agents for disadvantaged children and many viable suggestions toward this end are made in the review papers.

PART III: COMMENTARY ON RESEARCH REVIEWS AND SOME IMPLICATIONS FOR FUTURE RESEARCH

Commentary on Research Reviews

The preceding material, much of it in the actual words of our contributing authors, represents something of the state of current knowledge about the effects of psychosocial deprivation on outcomes in personality or social and emotional development. As indicated at the outset of part II, the topics selected for coverage were meant to be representative rather than exhaustive, illustrative rather than systematic. An effort was made to cover those personality areas which have been implicated repeatedly in discussions and research on the disadvantaged, variables on which at least some empirical base by now had been established, and which readily could be seen to serve as mediating links between the environment and behavior.

The resultant review of research has certain limitations which should be noted. A number of attributes of personality, equally significant as those included, were omitted. For example, other motives besides achievement and affiliation and dependency are also important in behavior and are also likely to reflect the influence of disadvantaged conditions of life. The area of values was not addressed directly in our reviews, nor were certain socially significant attitudes such as those which are involved in intergroup prejudice. To these omissions should be added certain beliefs and orientations, such as alienation and the orientation toward time, attributes often considered to reflect sociocultural variation and to influence behavior choice.

Another limitation of the reviews is their overwhelming tendency to be age limited rather than to span a wide range of the development trajectory. Most of the empirical findings refer to children and youth, excluding infants and older adults. While this shortcoming is serious, it aptly reflects the present confines of empirical knowledge. Useful measures of acquired social and emotional dispositions and skills have not been devised for very young children, and adult populations are not readily accessible for personality research. Consequently, much of the data on which conclusions have been drawn refer to school-age populations, and their generalizability to untested portions of the age range remains tenuous.

Finally, it should be mentioned that the research conclusions presented in the reviews are heterogeneous in their compellingness. Some of the topics have a more developed empirical foundation than others, and some relationships within a topic area are more firmly established than others. Our aim was to give a picture of the general state of knowledge about a variable, relying largely on the conviction of a contributing author about his conclusions to judge their merit. For this reason, it is clear that specific empirical generalizations may be open to challenge; on the other hand, we feel some degree of confidence in the overall reviews as representing the "state of the art" in their respective areas.

With these caveats in mind, it is possible to mention a half dozen or so impressions that emerge compellingly from the research reviews. The first of these is that there tends to be a *syndome* quality to whatever is referred to by the term deprivation or disadvantage. Where one type of deprivation, e.g., social, is implicated, other types, biological or psychological, seem to be associated with it. Where a particular kind of social deprivation is involved, e.g., a broken family structure, it tends to be accompanied by other conditions, e.g., a stigmatizing social environment. In short, although research may try to separate out specific aspects of deprivation for study, these aspects seem to be interwined with each other in nature. Another way of stating this is to say that, while it is not necessarily the case, there tend to be strong correlations in the ecology of disadvantage. The implications of this point for efforts at change or intervention are obviously enormous. They ought not, however, lead to views of disadvantage which are merely stereotypes.

Second, the research reviews, although dealing with rather different personality outcomes, recurrently identify the same small set of environmental antecedent conditions of disadvantage. Beyond such distal variables as poverty and race, there appear again and again references to parental neglect, failure experience, stigma, deviant models, limited access to opportunity, diffuse rather than specific verbal reinforcement, low teacher expectations, and the like. Such consonance in environmental antecedents may reflect no more than the availability of concepts or instruments or indicators to measure them. On the other hand, and of potentially extreme importance, is the possibility that the same environmental antecedents have multiple and reverberating consequences for personality development. Instead of a point-for-point relationship between specific aspects of disadvantage and specific personality outcomes, a given disadvantage—father absence—may influence a variety of outcomes—low need for achievement, low self-esteem, poor sex role development, and inability to carry out tasks, etc.

If this point—the possibly multiple consequences of a specific disadvantage—and the preceding point—the syndrome quality of disadvantage—are put together, then the degree to which disadvantage can be *pervasively* debilitating is readily apparent. This leads us to a third major impression evoked by the preceding research reviews, namely, the fact of correlation among the personality outcomes of deprivation. In short, not only do there seem to be syndromes of disadvantage as noted above, but *there seem to be syndromes of personality consequences of disadvantage.* The separate reviews, focused upon particular attributes, frequently "stray" to mention other attributes. It is, as a matter of fact, difficult to consider limited imaginative capacity without alluding to inability to defer gratification, or to describe low sense of control over the environment without describing low self-esteem. If these correlations do reflect the state of nature, rather than simply definitional or measurement overlaps, this may constitute an important fact about personality development, at least under conditions of disadvantage.

That such correlations should obtain is not unreasonable on several counts. One of these is that correlation of outcomes is implied by the multiple consequences of specific disadvantage noted above. Another is that certain processes may operate to generate a "spread of effects" phenomenon; stigmatization may be such a process, whereby a particular personality outcome of deprivation, say low motivation for school achievement, may lead to stigma, which in turn leads to low self-esteem, etc. A further possibility derives from the heavy cognitive component running through nearly all personality outcomes, a common component which may mediate the reverberations of disadvantage throughout the personality system.

The fourth major impression has to do with behavior, and thus, the three main regions of the schema presented in part I of this paper will have been touched upon. The point here is that the variety of personality outcomes considered above seem, at least in part, to be somewhat interchangeable in relation to behavior or performance. Delinquency, for example, may involve a low sense of internal control or other aspects of ego strength, or it may involve low school motivation, or inability to defer gratification, or poor social role development. Thus delinquency, or poor school performance, or maladjustment may be mediated by one or another of these personality variables, insofar as they are independent of each other, or by a syndrome of these variables, insofar as they vary correlatively.

A fifth point which is generally suggested by the research is that the effects of disadvantage are likely to be cumulative through time, further deprivation being generated by the outcomes of previous disadvantage, and spiralling in its effects. Consider how parental rejection in childhood may influence the development of low self-esteem, and how this in turn may inhibit striving efforts in school, which condition in turn elicits stigmatizing teacher reactions, which then generate self-fulfilling prophecies and lead to school failure, which cuts off access to occupational opportunity. This point, that the effects of disadvantage cumulate through time, when added to the previous discussion of their prevasiveness at any given point in time, begins to give a more realistic picture of the scope of the problem involved in considering disadvantage.

Sixth, what should be clear from the research reviews is that there is at least some identifiable content to the concept of "a deprived or disadvantaged personality." The content consists of the low, or poor, or socially or personally undesirable ends of the dimensions or attributes covered in the research reviews. There is no need to list these all here, but what is involved are such attributes as low-achievement orientation, low perception of opportunity, low sense of control, poor imaginative capacity, poor social role development and interpersonal skill, etc. It is important to stress, in this connection, that the research results are in agreement that the disadvantaged value the goods and rewards of society much the same as the advantaged. What is different between the advantaged and the disadvantaged is this set of attributes, all of which are likely to make attainment of those goods and rewards difficult if not, realistically, impossible.

Finally, the demonstrated relations of these personality attributes to behavior—to school performance, to delinquency, and the like—make clear that the latter cannot any longer be interpreted simply in terms of variation in intellect or in the traditional verbal and cognitive skills. The fact that personality attributes can account for part of the variance in those socially significant areas of behavior makes all the more imperative the understanding of the relation between disadvantage and personality development.

Some Implications for Future Research

The broadest statement that can be made following our survey is that much more knowledge—and therefore much more research—is imperative if understanding is to be attained about the relation of psychosocial deprivation to social and emotional development. Such knowledge is really no different from what is required for the advancement of behavioral science in general; some of the comments to be made below would, therefore, apply equally well to areas of concern other than deprivation alone. The comments will be made selectively and briefly, since their elaboration should be obvious.

1. Research in the deprivation area would benefit markedly from the development of more comprehensive theory. Such theory, in providing concepts to differentiate the environment system, the person system, and the behavior system, would enable *systematic* relationships to be pursued rather than the ad hoc ones presently involved in so much of the research. It would also pro-

vide a logical basis for devising measures so that tests of relationships among variables can remain rigorously systematic.

2. Research needs to encompass more of the links in the causal chain, in particular investigations, than characteristically is done at present. What is implied here is the need for the kind of investigation which ideally links environmental variation with variation in socialization processes, which links the latter in turn with personality variation, and which then ties personality variation to variation in behavior. Several of the contributing authors call for more comprehensive research models, and the argument to be made in favor of such models lies in the greater logical compellingness of multiple, established linkages over individual, isolated ones. (In connection with this point and the preceding one, see the theoretical and research paradigm described in Jessor *et al.*, 1968.)

3. A theme perhaps more recurrent than any other is the reiteration of the need for longitudinal research. It is interesting to see this emphasis in view of the widely recognized difficulties of longitudinal studies and in view of the relatively unimpressive outcome of the early longitudinal projects in this country. What seems apparent is the increasing recognition that longitudinal studies are the only way to answer certain kinds of questions about processes, like development, which are extended in time. With respect to the effects of psychosocial deprivation, the need for time-extended knowledge has been made clear earlier. Since the effects tend to be cumulative, dependent variables can rapidly become independent variables, and cross-sectional designs will neither discover this nor contribute the knowledge about change that is obviously necessary.

4. Research needs to be expanded, both in populations and contexts, much beyond what has characterized work thus far. The heavy concentration on the school context and the school age range, a pragmatic accommodation to their accessibility, has resulted, unfortunately, in a narrow empirical base. We need studies of older people, of a wider variety of disadvantages, of those only slightly disadvantaged rather than overwhelmingly so, of those disadvantaged in subtle and private ways where public stigma is not necessarily involved, etc.

5. Of crucial importance is the need for research on the specificity or generality of deprivation effects. While our research reviews, as noted earlier, suggest a good deal of generality, the matter is essentially an empirical issue, especially given our awareness of the situational specificity of so much of social behavior.

6. An area of research demanding much more attention is that which deals with the processes of socialization or acquisition of personality. The role of reinforcement is still understood largely by extension from highly restricted contexts. Seminal work on modeling needs to be carried further; the role of the mass media, especially television, as "a socializer" is only partially

understood—sometimes TV is seen as a source of models, sometimes as a direct teacher, sometimes as irrelevant to socialization.

7. The role of nonparental agents in socialization relevant to deprivation has hardly been explored. Yet, if a core factor in disadvantaged backgrounds is absent or ineffective parents, then nonparental agents—peers especially, but also teachers—likely serve as crucial socializers, and their role and function need to be better understood.

8. What would be extremely illuminating to our understanding of disadvantage would be selective concentration on the nature and operation of its opposite, that is, of advantage. Studies of effective families, of effective teachers, of youth who are effective and successful despite apparent disadvantage may help reveal the factors essential to adequate social-emotional development.

9. Lying at the nexus of much of the deprivation work is the notion of stigma: that certain attributes serve to discredit persons in the eyes of other persons. Studies of processes of this sort summarized by the stigma concept may help reveal the texture of the interpersonal interactions which, in the last analysis, serve as a major vehicle for deprivation.

10. Research is needed on the changeability of personality attributes and on what conditions and experiences are most significant as change agents. Such knowledge would obviously be of importance in understanding the degree of reversibility of the effects of disadvantage, and how to accomplish it.

11. During childhood there is considerable evidence that the effects of disadvantage are already manifest by the age of 3 years. Further, to the extent that there are measures for the assessment of the first year of life, children with widely varying experiences and environments evidently develop at about the same rate. This suggests that disadvantage becomes important between the ages of 1 and 3. It is this period in which we know least about development and where it is hardest to gain access to appropriate populations of children for study. This suggests that a high priority should be given to learning more about children, their behavior and their environments during this period between 1 and 3.

12. Perhaps the best way to end this set of a dozen comments about research implications is to affirm that the central gap in knowledge has to do with the proximal environment and to urge detailed and careful studies of the social psychological ecology. Ecological studies of the context of disadvantage—the ecology of success and failure, of affection and rejection, of deviant and conforming role models, of abstract and concrete discourse, of negative sanctions and positive support for deviance, of normative consenus and dissensus, etc.—would help to reveal the invariant aspects of disadvantage and provide us with knowledge of where successful change efforts should begin.

These research comments are obviously quite general and selective. They do not substitute for the research suggestions the contributing authors made in their own particular areas, suggestions the reader should consult in the original papers. Our concern is mainly to illustrate the wide range of problems and the varying levels of analysis that research will need to confront. Having done that, we wish to stress our sense of urgency that research on psychosocial deprivation should be given high priority and receive massive support.

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Chapter II

INFLUENCES OF BIOLOGICAL, PSYCHOLOGICAL, AND SOCIAL DEPRIVATIONS UPON LEARNING AND PERFORMANCE

James E. Birren and Robert D. Hess

Papers Contributed by

RAY BORTNER	Adult Life Strategies and Deprivation.
CARL EISDORFER	Observations on Some Issues Involving Bio-Psychosocial Deprivation and Adult Learning.
WILLIAM FOWLER	Problems of Deprivation and Developmental Learning.
JACOB L. GEWIRTZ	Some Points on Contingency-Learning for the Task Force on Cognition and Learning.
ARTHUR JENSEN	The Role of Verbal Mediation in Mental Development.
WILLIAM LABOV	Social and Biological Deprivation: Influences on Learning and Performance.
MORTON A. LIEBERMAN	Institutionalization of the Aged: Effects on Behavior.
ROLF MONGE	The Relation of Learning in Adults to Social and Biological Deprivation.
KLAUS F. RIEGEL	Effects of Socio-cultural and Biological Conditions upon Linguistic and Cognitive Functioning of Aged Persons.
IRVING E. SIGEL	Some Thoughts on Directions for Research in Cognitive Development.
THOMAS STICHT	Learning Abilities of Disadvantaged Adults.

Chapter II

INFLUENCES OF BIOLOGICAL, PSYCHOLOGICAL AND SOCIAL DEPRIVATIONS UPON LEARNING AND PERFORMANCE

PART I: CONCEPTS OF DEPRIVATION AND DISADVANTAGE

The embryonic character of research and theory in this field is illustrated by the diversity and confusion in terminology and conceptualizations of the nature of psychosocial deprivation and disadvantage. A more adequate conceptualization of the problem is thus of highest priority as a basis for research and program planning. In its current loose usage, the terms (meaning lower class ethnic poor) may stand as euphemisms for some listeners and an insult for others (to whom the terms are applied). Other labels have been used (underprivileged, culturally different, working class, inner city children, etc.) to refer in a general way to a *segment of the population* which is generally regarded as having suffered some lack of opportunity or misfortune of some sort. These terms all suffer from a common dilemma: how to refer to a part of society which is relatively low in prestige, status, power, and other basic resources without adding to their misfortune by stereotyping them and suggesting that they are inferior as judged by some middle-class norm of behavior.

It is useful to point out that there are two standards of deprivation: *objective* standards (defined by "experts" or by social norms) and *subjective* standards (those the subject himself defines). Both present problems of definition and measurement and the two standards are not always in agreement. Physical needs of the organism are more readily defined than are those of social deprivation, and associated deprivation states are, perhaps, more easily measured. This is particularly so when we deal with such aspects of deprivation as, for example, the amount of time a child spends with his mother or father. The child's subjective estimate of how much time he spends or wants to spend with his parents will probably not agree directly with an objective (i.e., "expert") estimation of the parent-child deprivation.

Distinctions may be made among four aspects of deprivation: (1) a condition or configuration of elements in the environment, (2) the mechanisms of exchange which mediate the impact of these environmental stimuli on the behavior and capabilities of the organism, (3) the products of these individual-environmental exchanges upon the characteristics and behavior of the organism, and (4) the time in the life span during which the condition exists. These distinctions all assume that psychosocial deprivation refers to the environmental surround and to that part of the surround which is imposed either by neglect, priority, or deliberate policy on individual members of the society or institution.

This emphasis upon the external environmental context as the origin of deprivation excludes certain deficits and impairments which may have similar effects but which occur through natural causes, such as deterioration of physical structures through aging, congenital defects, accidents (unrelated to environmental deficiencies), and the like. Such conditions and their impact upon optimal functioning are discussed in certain sections of this chapter because of the contribution such knowledge may make to an understanding of deprivation and its interaction on the well-being of the organism. These are critical and relevant areas for study, of course. However, the central focus of this task force is upon deprivation which arises from conditions over which the society has more discretionary control.

Models of Deprivation and Its Impact Upon Behavior

In more general terms, conceptualizations of the nature of the deprivation and/or the mechanisms through which it affects individual cognitive behavior or the evaluation (reinforcement) of behavior appear in explicit or implicit form in the current literature and in the papers prepared for the task force. These views may be summarized as follows:

1. *Malnutrition Model*

Perhaps the most popular view of psychosocial deprivation follows a model similar to that of the effects of malnutrition. The child who is "deprived" has received insufficient quantities of nutrients of the sort needed for appropriate growth and development. This simple model is elaborated in various ways by writers in the field.

a. Economic deprivation.—In one form or another, the notion of economic deprivation as the core problem of disadvantaged children from which all other problems flow is found in a considerable number of writings, especially those by sociologists and economists. An assumption underlying this point of view is that the heart of the problem of the disadvantaged is their inability to purchase goods and services of various kinds, rather than a matter of how disadvantaged persons would spend financial resources if they were available. This view tends to emphasize the issue of available resources rather than of values, culture, and life style. There is typically little elaboration of the mechanisms of interchange between the environment and individual behavior—that is, it is not made clear how the availability of additional resources would affect the cognitive, social, and emotional development of children and of adults.

b. Deprivation as a lack of exposure to beneficial stimulation.—Perhaps the most popular conceptualization of the impact of psychosocial deprivation is that the child (and the adult) has not been exposed to "beneficial" stimuli of various sorts. He has not learned at home the concepts he will need in school or the vocabulary that is required for effective functioning in contemporary society; he has not been exposed to cultural artifacts and experiences of various sorts; his store of information about the world and the way it works is inadequate. In short, his life is lacking in the kinds of stimulation which are needed to promote effective cognitive and social growth. This point of view represents a concept of learning as a cushion of relevant experiences and the acquisition of relevant knowledge; relevant being defined as useful experiences of the middle-class, school-oriented society.

c. Deprivation as a lack of pattern in the experiential world.—Another point of view closely related to the previous one is that the experience of a child has not included an adequate array of patterns, sequences, or associations between events to allow him to develop an understanding of the relation of elements of the experiential world to one another. He is not accustomed to seeing cause and effect, for example. The stimulation and the stimuli to which a child is exposed are not presented in a context which will permit him to use them or generalize them for some future situation or experience. Deprivation, then, becomes not a matter of the absence of stimuli but the absence of pattern, association, and sequence in the stimuli presented to the child. Sometimes this is phrased as a lack of meaning in the external world or the consequent inability of the older adult, as well as the child, to organize and use the stimuli with which he is familiar.

d. Deprivation as an absence of contingencies in the environment.—Some writers cast the problem of psychosocial deprivation as one of a special case of contingencies in the reinforcement patterns to which the individuals are exposed. In deprived circumstances, for example, socializing agents do not relate the input of the stimulation to effective learning schedules (Gewirtz, 1968; Hess, 1968; Hess and Shipman, 1967). In the view of these writers, an essential feature of the problem is one of design of the environment. The environment of the disadvantaged child is arranged (primarily by the parents or teacher) in such a way that the desired behavior is not adequately encouraged by appropriate reinforcement schedules. One could see this view of deprivation as having no new elements from a learning theory point of view but as a statement of a context in which the input is controlled by human rather than experimental or experimenter sources and in which the human sources of environmental design and control have not been effectively organized to produce desired results. (See Gewirtz' arguments on this point later in this section.)

e. Deprivation as interaction between developmental maturational needs and lack of stimulation.—A common point of view in the discussion of the malnutrition model is that certain cognitive activities play a biologically stimulating role in the maturation of neural structures that are important for later cognitive development and learning. There is evidence from animal studies that stimulation of various kinds may affect the growth of neural structures, and it seems plausible that this interaction between biological structure and environment may be involved in the impact of psychosocial deprivation upon cognitive development and learning in humans. Opportunity to use previously acquired skills may reflect itself in disuse of neural structures in the older adult.

2. *Cultural Disparity Model*

A number of writers, particularly sociologists and anthropologists, are concerned with cultural and societal components in psychosocial deprivation. Their views emphasize structural features, seeing the difficulty as residing in disparities and conflict of values and goals between subculture and the large sociocultural system. They take several forms.

a. Deprivation as an outcome of cultural pluralism.—From one view, ethnic differences and self-imposed or involuntary segregation of ethnic groups into enclaves or ghettos induce disadvantages of various kinds. Ethnic dialects and languages have lower prestige in the community than does standard English (Lambert and Taguchi, 1956); occupational and educational opportunities are likely to be restricted not only by discrimination but by lack of information and contact with other segments of the society. The nature of the deprivation, however, is not so much in absolute level of capability and achievement as in the differential evaluation of ethnic characteristics by the dominant society and by other relevant ethnic groups. The most popular intervention technique in programs designed to assist ethnic groups in the past has been to accelerate the process of acculturation (Americanization) in order to decrease or eliminate cultural differences. More recently, there is some tendency to recognize, value, and utilize ethnic characteristics in the service of educational, economic, and political goals. The rise of black power and the introduction of courses on African culture into the schools are examples of this trend. Culture drift may also place the mature adult in a disadvantaged position with antiquated social and occupational skills, suitable for a previous era. Migrating or immigrating adults may be placed in seriously disadvantaged positions.

b. Deprivation as learning of behavior not rewarded by middle-class society.—One point of view is that children in disadvantaged areas in the society, especially in slum communities, learn behavior which is appropriate and useful for their home environment but which is not useful for subsequent experiences in the school, is not rewarded, and is therefore not successful. The emphasis of the proponents of this point of view is not on the inability of the child to learn, but on the lack of congruence between the behavior he has learned and the behavior valued by the middle-class, school-oriented society.

c. Deprivation due to the inadequacy of social institutions.—Related to the above point of view is the perspective that the difficulty resides in the institutions of middle-class society whose representatives in the school, the police force, and other parts of the social structure fail to understand the child or the adult, to be sympathetic with his problems, to be able to communicate with him, or in other ways to permit him to learn about and relate to the central components of society. Labov presents this point of view in his report for our Task Force in the following way:

> There have always been poor people in the United States—relatively or absolutely poor—and in this sense deprived of privilege, power, and the means to enjoy life as others do. But it has been assumed that all of these citizens had an equal opportunity to improve their situation, or that of their children, and the social structure of this country is supposedly organized to make this possible. In recent years it has been generally recognized that this is not the case: being poor has become a steady state for a number of groups of Americans—in particular, Negroes, Puerto Ricans, Mexican-Americans, and Southern whites in Appalachia. A child who grows up in such poor households does not have the same expectation of upward social mobility as in the past, with other ethnic groups. The social performance of children from these families has been especially bad, and educational failure has provided a further bar to upward movement. These children are therefore deprived in an important sense—deprived of the opportunity for upward social mobility which is the principal advantage which American society offers. There may also be a problem of biological deprivation, as the result of poor food and medical care, but the problem which has become intense for this group is social deprivation.

Failure in school, and especially failure to learn to read, is plainly the cause of further social deprivation. It has also been considered the result of deprivation. Many observers believe that there are certain values and skills which are normally conveyed to children in American households, but which are not conveyed to children in such poor households. The goal of programs such as Operation Headstart is to remedy the situation by supplying the missing elements to preschool children.

There is, however, another point of view, which focuses upon the defects of the teachers and the schools, rather than those of the children. As far as adults are concerned, one can consider the absence of initiative, independence, and occupational skills of the unemployed—or the objective character of the social system which they face. The children of poor households may have poor learning patterns, little practice in abstraction, and bad discipline; but it is also true that teachers are ignorant of the children's needs, have poor perception of their abilities, and lack the skills to teach them properly.

The cultural matrix of the ghetto includes: the patterns which have been described as "lower class culture" (Miller, 1958) common to many ethnic groups; the particular cultural forms of the ethnic groups involved; and patterns common to delinquent youth in large cities, such as those described by Cloward and Ohlin (1960) or Cohen (1955). As a whole, these patterns have one thing in common—they are opposed to the dominant middle-class value system. The school's orientation toward planning for the future, on abstract and objective discourse, on learning for its own sake, on respect for the law, civil religion, and private property, the rules for propriety of sexual and verbal behavior—these values conflict with the values of the vernacular culture maintained in the underprivileged or "deprived" areas.

It should be clear to anyone who has intimate knowledge of the ghetto areas that "cultural deprivation" or "verbal deprivation" are poor concepts with which to approach the educational problems. The children encountered on their own grounds are not empty vessels, waiting to be filled with middle-class culture. They are in contact with a different and opposing culture; in the years from 5 to 15 they come to know their own culture more perfectly, the school culture less and less. For many, there is an explicit rejection of the school and its values—for others, the conflict which interferes with success in school is hidden from view.

3. *Social Structural Model*

From one theoretical stance, disadvantaged is an inherent feature of a complex, highly differentiated, hierarchical social system. In a society such as ours, the distribution of resources and of prestige and power imposes upon some parts of the population disadvantages which are in turn related to individual cognitive activity and achievement.

a. Deprivation as an outcome of competition for scarce resources in the society.—In a hierarchical system, dominant groups may for their own economic or social interest attempt to maintain the dependence of other segments of the society and to exclude them from competition in the labor market and other areas. For example, the exclusion of Negroes from labor unions may be seen as due to competition for jobs as well as to discriminatory practice. From this viewpoint, competitive barriers of any kind which are established to minimize or eliminate competition and which systematically exclude groups on the basis of group rather than individual characteristics may be regarded as deprivation based on social-structural consideration.

b. Deprivation as a lack of alternatives for action in the society.—Another structural view of deprivation is that the lack of power, prestige, and other resources for action places the individual in situations which require little thought or comparison and, therefore, stimulate relatively few of the cognitive operations that are needed for success in the middle-class society (Hess, 1964). The child's and adult's lack of opportunities and alternatives are disadvantages imposed by the social structure of which he is a part. There are some recent studies which examine the linkages between broad social variables and individual cognitive and educational achievement (Hess et al., 1968; Hess, in press; Kamii and Radin, 1967; Bernstein, in press), particularly through behavior mediated by the family.

c. Deprivation as discrimination against ethnic groups and the poor.—Some researchers view as a central component of disadvantaged populations, discriminatory experiences in the society against persons who lack wealth or resources and against those of certain minority group ancestry. The effects of racial discrimination have been described by many writers, Coleman (1966), Pettigrew (1964), and Katz and Cohen (1962). The mechanisms by which discrimination presumably affects learning and cognition are primarily evident in a lack of a sense of competence and efficacy or a lack of willingness to be assertive in the environment. The implications of this point of view are many, affecting school systems and a number of other areas which have an impact upon educability and cognitive activity. A good deal of research is now underway to explore the effects of discrimination and status differential upon productive activity and effectiveness in groups.

4. *Environmental Trauma Model*

Deprivation and poor environments are seen by some writers to have specifically damaging effects upon the capability of the young child. The most frequent statement of this kind of argument is the "irreversibility concept" that suggests a permanently negative effect upon mental capabilities as a result of early deprivation. This is related to the stimulation-neural-structure-interaction concept described above but goes beyond this to suggest that experiences of poverty, of violence, and of discrimination damage the emotional-intellectual capability of the individual, making it difficult if not impossible for him to recover fully.

5. *Underdeveloped Resources Model*

A point of view implicit in several arguments in the literature is that the effect of psychosocial deprivation is primarily a matter of underdevelopment of human capabilities. This view holds that the child has adapted to his world adequately but that his environment is relatively simple, lacking in the complexity needed for effective functioning in a wider social environment. Given appropriate opportunities, the child, or the adult, will acquire the experiences or capabilities that he needs.

6. *Deprivation as Deviance From Optimal Environmental Conditions*

These types of impact of psychosocial deprivation upon the individual's capabilities do not exhaust the connotations of the term. As indicated earlier in this section, the term deprivation may be used to include both disadvantaged states imposed upon the individual by his environment and loss states accruing from impairment of normal functioning mechanisms of the organism. Thus, deprivation is used to include the disadvantaged states. Being deprived in this broad sense means maturing and aging under conditions of life which are less than optimum. This definition of deprivation includes the undesirable consequences of over-exposure to a normally positive influence. Sensory deprivation and isolation may lead to inadequate behavior on the part of an individual, but overexposure to auditory stimulation under the conditions of noise levels in industry may result in auditory defects. Nutritional elements may limit the development of an individual in states of deficiency but may also cause maldevelopment if present in excessive amounts. A further example is seen in social isolation. Adults generally have higher life satisfactions and display more adequate behavior if they are in interaction with a significant number of other persons. Under conditions of urban crowding, however, the amount of social interaction may be forced to such an oppressively high level that individual behavior might improve with some reduction of the required social interaction. The general scientific problem is to discover the optimum range between excesses and shortages.

From the foregoing it is obvious that these levels of deprivation might be distinguished: (1) that which is necessary for the survival of the individual, (2) that which is normative or expected in the culture, and (3) that which is optimum for developing as well as for aging individuals. These three levels may be described as degrees of deprivation, sufficiency, and satiety.

This suggests that the optimum environment can be best defined for each age level in terms of the biological, psychological, and social needs of individuals at various age levels throughout the life span. A dietary pattern for the pregnant mother, the growing child, the adolescent, and the older adult are indeed different, just as the optimum activity level for physical exercise is different for various age levels.

Generally speaking, *social class*, *ethnicity*, and *income* show relationships with deprivation. These broad variables, however, disguise more detailed conditions of the environment. The lower class individual for example, is frequently more exposed to noxious environmental conditions and is unfavored in the recovery from such exposures. This leads to an accumulation of undesirable environmental consequences. In broad terms, behavior of the lower social class is influenced by the direct struggle for simple subsistence, whereas middle class behavior, not being preoccupied with this struggle, is more involved in working toward abstract goals.

Another dimension of deprivation has to do with the *adequacy of* the information available to the individual in the invironment. Young and old adults, upper and lower class persons, live in different streams of information that influence their view of the environment and their willingness to initiate action. For example, failure to understand the significance of an illness may lead the individual to ignore symptoms of potential danger. Biological deprivation at times appears as the cause of inadequate behavior but at other times is itself the result of social deprivation. Illness in the wage earner of a family as a consequence of neglect may further reduce the standard of living of the family. Thus, social deprivation may lead to health deprivation which, in turn, leads to further social deprivation in the family, and a spiral of downward social mobility may be developed. States of deprivation in the human population are continually interacting.

In addition to the states of relative deprivation associated with social class, ethnic, and geographic differences, the effects of *institutions* must also be considered. In previous generations, substantial numbers of children grew up in institutions for orphans. More recently, because of the large number of older adults in institutions, the effect of the character of institutions upon individual behavior has again come to assume considerable importance. The character of institutional settings may have a temporary or a permanent influence on the adequacy of the behavior of the residents.

Subjective Deprivation as a Corollary of Psychosocial Deprivation

People cannot feel deprived if they do not know of the existence of a desideratum, nor do they necessarily feel deprived because they know that a desideratum exists. In discussing peasant society and culture, Redfield (1967) notes that traditions and traditional problem solutions may be preserved relatively intact although a variety of compromises have to be made with the dominant culture. He indicates that the peasant might wish to emulate but would never think of being like or becoming one of the gentry. He notes that the peasantry has been a conservative force precisely because they have clung to traditional strategies for negotiating life's obstacles. He also noted that this state of affairs was rapidly changing and attributes it to technological change. Mead (1956) found that while there was stress in the trading economy of the Manus of New Guinea which might have been ameliorated by adopting European techniques, the Manus experienced no sense of deprivation vis-a-vis whites despite prolonged exposure to German and Australian administrators and missionaries. It was only with the massive exposure to American material and technical achievements and the egalitarian ideology and practices of Australian and American troops that they could conceive of a change in their culture and begin to experience deprivation vis-a-vis white men. Redfield (1967) also notes the different response on the part of Indians and ladinos to what is objectively a similar degree of deprivation.

Subjective deprivation *always* implies an invidious comparison between the self and the rewarded other or with one's past status. When traditional patterns and strategies no longer function, the invidious comparison with the dominant culture or with the more favored person is more damaging to self-respect. Hoffer (1963) comes to the conclusion that both the imitation of many western techniques and the growing anti-western sentiment stem from this feeling of weakness. There is evidence that when there is no way to bridge the gap in status, the subjectively deprived become apathetic.

Anthropological descriptions of Indians in both North and South America can be supplemented by survey data on a number of countries described by Cantril (1965). He describes two phases of this process.

In Phase I, people are too depressed to have any ambitions and are unaware of any possible actions which might alleviate their lot. The passivity or apathy may be enhanced by a fatalistic philosophy of life that is either indigenous to the culture of the country or is an outgrowth of long periods of self-evaluation. Often this is transmitted from one generation to another by denigration of any efforts on the part of the child to change this pattern of behavior. For example, in a description of hard-core, lower class, multi-problem families, Pavenstedt (1967) describes how the lack of parental self-respect is communicated to and results in denigration of the child by the parents as well as by society at large.

Devaluation of the self is associated with concrete thinking, a marked orientation to the present, and doubts about the effectiveness of one's own actions. Along with this is a tendency to see the source of values and evaluation as external, rigid, and arbitrary. The environment is of such prime significance that even the senses may be used differently. According to Malone (in Pavenstedt, 1967), the unpredictable nature of the environment leads to diffused hearing and vision. There is some evidence that with diminished self-respect the level of aspiration is lowered and there is a reliance on chance rather than skill. Given choices, there is a tendency to opt for either the very safe and sure or the high return but remote probability option.

In Phase II, where there is some probability of achieving parity, the situation is quite different. Mead (1966), for example, describes the utter rejection of the traditional and the sudden appearance of expansive behavior which accompanied the development of the cargo cults in the South Pacific areas. Once it is perceived that a possibility for parity exists, expectations tend to exceed resources. Mead notes that among the relatively sophisticated Manus, a brief interval existed during which magical thinking served the dual purpose of rejecting all of the old and traditional ways and doing away with all of the artifacts which may have accounted for being set apart. Despite these magical elements, there was an implicit recognition that what one did might have an effect on outcome. The lack of access to the goods and materials of the past were no longer attributed to inherent deficiencies in the self but became, variously, a function of having had the wrong ideology (worshiping the wrong gods), a failure to develop a technology (no opportunity for education or for gaining "know-how") or a deliberate withholding and/or malign intent on the part of the whites. Of Phase II, Cantril says,

> This is the phase in which people become aware of new possibilities to increase the range or quality of their satisfactions, when they acquire new aspirations and learn new purposes. In this phase people become psychologically mobilized as they learn what they *can* want out of life.
>
> The period of acquiring new *frustrations* has been labelled the "disturbed" phase; the phase when people discover that the assumption and loyalties of their reality worlds are hemming them in and creating too rigid constraints. The data have continuously shown that frustration and worry are the other side of the coin of hope. So people goad themselves to be rid of these constraints and handicaps . . . There is likely to be an interim period of relative social chaos, irresponsibility and lack of discipline following the breakdown of established loyalties, institutions, and controls.

As with these adults whose subjective and objective deprivations have been less than lifelong (following economic depressions, long imprisonment, chronic illness), during this second phase a shaken "inner certitude of self" requires testing and validation. Strategies devoted primarily to the fulfillment of other needs often have a demonstrative quality. Demonstrativeness always implies an audience. The ultimate strategy is the testing of strategies.

The relationship between expectations and power relationships has been a very active area of investigation. Since the publication of Thibaut and Kelly's work (1959), the explorations of strategies adopted in various positions and under different circumstances has proliferated to the point that it has become almost a specialty in itself. Suffice it to say here that the bulk of the evidence suggests that the person in a less powerful position has a greater tendency to shift strategies.

PART II: REVIEW OF CURRENT KNOWLEDGE

Socioeconomic Status Differences in Cognitive and Educational Ability[1]

The current body of research is replete with studies that describe children from socioeconomically deprived areas as possessing characteristics[2] which limit their school achievement:

1. Restricted and limited knowledge of their environment;
2. Concretistic in their thought rather than conceptualistic (Sigel and Olmsted, 1967);
3. Using language for communication but not as a tool for reflective and introspective thought (John, 1963);
4. Reading and learning disability in terms of school tasks (Deutsch, 1963);
5. Presenting a high potential of school failure;
6. Time orientation in the present with short-time perspective for planning (Miller, Riessman and Seagull, 1965);
7. Difficulty in dealing with representational material, imagery, etc. (Sigel and McBane, 1967).

The repeatedly documented association between abilities and socioeconomic and cultural variables provides a useful but limited framework for identifying gross differences in the effects of environment upon abilities. At this level of analysis, the lack of information about both developmental and environmental variables leaves genetic and experiential factors confounded and precludes effective manipulation of the conditions of learning. In contrast, variables such as childrearing (Baldwin et al., 1945; Bronfenbrenner, 1958), communication modes (Hess and Shipman, 1965), and the general learning atmosphere and degree of language focus in the home (Dave, 1963) have not only been shown to be more potently related to abilities, but they can be conceptualized in terms which bear more directly on the learning processes themselves.

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[1] The literature on cognitive behavior and SES, both theoretical and empirical, is increasing rapidly as a result of large government appropriations and foundation grants for research on U.S. lower class populations. In addition, major research programs have been established by Project Head Start, Office of Economic Opportunity, and the National Laboratory on Early Education of the U.S. Office of Education, which are oriented toward more intensive examination of many of the issues discussed in this section. These studies and programs encompass many different ethnic groups, thousands of white and nonwhite children, use many existing and newly developed tests, and attempt, among other goals, to relate teacher and parent behavior and characteristics to pupil behavior. There is a growing body of evidence on the effects of integration on school achievement and experimental studies of attempts to alter the deleterious effects of SES and racial bias. A study of educational attainment of American Indian children is underway, and several national testing programs are accumulating data which will yield more definitive information on SES and test scores.

[2] This is but a partial list. For details of such a summary see Bloom, Davis & Hess, 1965.

A specialized contemporary development is the interest in analytic, integrative, scanning, and other processes of cognitive style (Fowler, 1966; Kagan et al., in press; Gardner et al., 1959, 1960), which appear to function on a level intermediate between general intelligence and specific, area-linked abilities. They bear some resemblance to functions in earlier faculty psychology, which foundered on questions of transfer of learning (Grose and Birney, 1963). Yet, their anchorage, both in trait characteristics of personality and in properties of stimulus organization and perception, which find modest intersituation reliability in other contexts, suggest an important dimension of information processing and learning. In fact, there is evidence which directly links variations in representational (pictoral), analytic, and verbal abstract modes of functioning with ability and absence of social deprivation (Hess and Shipman, 1965; Sigel, Jerman, and Hanesian, 1967).

Another important line of research activity which has important implications for the differentiation of abilities and for the deprived child is the study of curiosity motivation and stimulus complexity and incongruity (Berlyne, 1960; Fiske and Moddi, 1961; Hunt, 1965). Findings in these areas indicate that the optimal conditions of arousal to perform and thus to learn probably vary according to how well the stimulus patterns dovetail with the already acquired perceptual-cognitive patterns and expectations of the subject. These findings would suggest that many of the difficulties of socially (perceptually cognitively) deprived children in school systems reflect grossly discrepant matches between program structures and the cognitive structures with which the deprived child is equipped. These studies also serve to reinforce the value of current movements toward programed learning.

There are other significant motivational characteristics which have been more or less identified in deprived children. Among these are a greater difficulty in delaying gratification, in working for longer range goals, and both greater apathy and withdrawal on one side, and hyperactivity, and low impulse control on the other (Ausubel, 1963). These may reasonably be seen as responses to the character of lower class environments, but they may also be more persisting response patterns of the individual. There is evidence that under conditions that insure tighter, continuing matches between the curriculum and the child, some of these (gross) motivational problems are dissipated (e.g., Bereiter, 1967; Fowler and Burnett, 1967; Sprigle, 1967).

One of the additional constraints upon the earlier attempts to relate social-environmental factors to ability arose from the fact that the major instrument employed to assess intellectual development was the IQ test. As with sociological variables, IQ test scores provide information largely at the most general level of population trends. The single, linear index minimizes the patterning and organization of abilities through the elimination of items which do not correlate highly with one another (Meyers and Dingman, 1960). This kind of assessment furnishes little data on learning and other cognitive functions. It also makes it difficult to analyze the relations between specific environmental sources and types of deprivation and stimulation (even if they have been adequately measured) on the one hand, and the development of abilities on the other. Moreover, the frequent and large individual IQ shifts are partly due to shifts in test composition relative to age.

Based on Piaget's (1952) observations and theories of cognitive development, there is a movement to measure cognitive development in terms of sequential scales of a variety of stage-linked cognitive operations (e.g., causality, intentionality, object identity, etc.). One study of infants shows a correlation of an object permanence scale with the Griffith Intelligence Scale of 0.916 (Decarie, 1965). This high correlation supports the view that Piaget's concepts of cognitive processes concentrate on intelligence at the most general and abstract level possibly to the neglect of many of the language-content, task-linked, and cognitive style characteristics which are later found to account for and explain more focally many individual differences in learning ability. Significant trend differences between advantaged and disadvantaged infants as early as 11 months of age on some Piaget type scales (Hunt, Wachs, and Uzgiris, 1967), however, suggest that these more logically identified cognitive operations may define ability characteristics more functionally than the traditional global and linear mental (IQ) tests. The latter instruments generally show no social class or other group differences until after 2 years of age, except on some motor items which favor Negro children regardless of class (Bayley, 1965).

A further important problem emerging in current efforts to explore and develop more varied measures of cognitive processes and other skills is the question of creativity. In the opinion of some, traditional IQ measures are composed mainly of tasks which place a premium upon memory and closed systems of problem solving and upon producing a specific predefined product (Getzels and Jackson, 1962; Guilford, 1967; Wallach and Kogan, 1965; Sigel, 1963). Measures are being developed which appear to be distinct from IQ measures and which measure more open-system, constructional forms of cognitive activity. There is evidence that certain forms of highly controlled child-rearing techniques in some phases of middle-class family life may be defined as forms of stimulus deprivation. The child is deprived of opportunities to explore, to ask broader questions, and to be exposed to varying stimulus situations. These child-rearing patterns make him bright but less creatively productive than the child reared in a still highly intellectually oriented, but more interactive open-ended fashion (e.g., D'Heurle and Haggard, 1959; Datta and Parloff, 1967).

Against this overview of relationships between social background and cognitive activities, it may be useful to summarize some research bearing on social class and ethnic differences in cognitive behavior and educational attainment.

1. *Socioeconomic Status Differences in Global Estimates of Behavior* [3]

Correlation coefficients between IQ or percentile ranks and the socioeconomic status scores of white children summarized across many studies (Eells et al., 1951) are moderate in size but statistically significant. The magnitude of correlation varies with the test used and the age level tested, half range between 0.25 and 0.50. In Eells' study, using standard group tests and age levels of 9, 10, 13, and 14 years, correlations ranged between 0.20 and 0.40 and were linear for the two older groups but nonlinear for the two younger groups (where the relationship was linear only for groups below upper middle class). The mean IQ differences between high and low SES groups ranged from 8 to 23 IQ points, the amount of IQ difference varying from test to test and by age level of the subjects. This study also confirmed previous results indicating a large amount of overlapping at all SES levels. Many high SES subjects received low scores and many low SES subjects obtained high scores.

2. *Socioeconomic Status Differences in the Profile of Cognitive Operations*

An item analysis of the IQ test differences between SES groups might be expected to be informative about the environmental conditions which might have been responsible for the differences, but findings that bear on this question are not entirely consistent. Evidence was provided in studies reported by Binet (1911), Stern (1914), Weintrob and Weintrob (1912), Bridges and Coler (1917), Burt (1922), Stoke (1927), Long (1935), Saltzman (1940), and Murray (1947). Eells et al. (1951), reporting on these studies, concluded that despite many inadequacies of procedure and some inconsistency of results, there appears to be a common tendency in the findings indicating that "test items which are essentially linguistic or scholastic in nature show comparatively large differences in favor of children from high socioeconomic backgrounds, while test items which are primarily perceptual or 'practical' in nature show either smaller differences or differences in favor of children from the lower socioeconomic backgrounds."

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[3] The textual material in this section includes excerpts and restatements of material in "Social Class and Ethnic Influences Upon Socialization," by Robert Hess, to appear in *Carmichael's Manual of Child Psychology*, Paul Mussen, editor.

Havighurst and Breese (1947) compared the test scores of 13-years-olds in terms of Primary Mental Abilities (Thurstone and Thurstone, 1943, 1958) and found that while high-status children scored higher on all variables, social class differences were greatest for the verbal, word-fluency, and number variables and less pronounced for space, reasoning, and memory. Roberts and Robinson (1952) and Mitchell (1956), studying the factorial organization of mental abilities of high and low SES children aged 11 and 12, found the same factors (number, verbal meaning, space, word fluency, reasoning and a general test factor) for both SES groups. The organization of mental abilities was, however, much less differentiated for the low-status children, whose pattern reflected a larger general intellective factor (Spearman's *g*) and less differentiation of the other factors. On the assumption that SES differences in IQ are primarily verbal, Mitchell suggested that this result was partly attributable to the greater saturation of the general factor with verbal components. The lower class child does not have the necessary verbal competence to perform, without a particular effort, the verbal tasks involved even in the nonverbal tests. Therefore, all mental tests, whether verbal or nonverbal in form, are more verbally weighted for the lower class than for the middle-class child. This point has been elaborated more recently by Jensen.

There is a limited amount of information about the intelligence test performance of ethnic groups (other than Negro) in this country. On performance tests, American-Indian children are closer to the norms of white children but do less well on verbal tests (Anastasi and Foley, 1949). They may equal or exceed whites on tests of drawing ability (Dennis, 1942; Russell, 1943; Havighurst, Gunther, and Pratt, 1946). Although it seems plausible, there is little evidence on the possibility of differences among American-Indian tribes. A similar pattern has been found for Mexican-American children (Garth, Elson, and Morton, 1936) and for Italian-American children (Held, 1941). Differences have been found between the pattern of abilities of Japanese-American children and white children, with Japanese groups earning higher scores on tests of visual perception, spatial orientation, and sustained attention, but lower on verbal tests and arithmetic (Darsie, 1926).

In a study significant for both design and substantive findings, Lesser et al. (1965), designed a project to analyze the relative impact of social class and ethnicity on intellective functioning. Using tests and testing conditions devised to minimize bias, they examined four mental abilities (verbal ability, reasoning, number facility, space conceptualization) of 320 first-grade children from four ethnic groups, Chinese, Jewish, Negro, and Puerto Rican, with each ethnic group divided into middle and lower class.

The major findings of the study were that both social class and ethnic group membership have strong but different effects upon performance on the tests covering the four mental abilities. Ethnicity affects the pattern or profile of performance; social class affects the level of achievement. Among the four ethnic groups, the rankings on the four test areas were as follows: *Verbal Ability:* Jews, Negroes, Chinese, Puerto Rican; *Reasoning:* Chinese, Jews, Negroes, Puerto Ricans; *Numerical Ability:* Jews, Chinese, Puerto Ricans, Negroes; *Space:* Chinese, Jews, Puerto Ricans, Negroes. Social class differences were greatest for the Negro group, suggesting relatively greater socioeconomic disadvantage for the lower class Negroes. In interpreting their data, Lesser and his associates concluded that the natural selection argument for social class effects upon mental abilities "seems weakened by the fact that, once the ethnic pattern of mental abilities emerges, no further alteration in the pattern occurs under the influence of differing social class conditions." They also argued that other explanations of social class effects upon mental abilities (motivation, impulse control, problem solving tactics) gain greater credence from their results.

In other studies the most extensive ethnic comparisons are between Negro and white children. Intelligence test scores of Negro children are typically lower, on the average, than those of white children. Shuey (1958) surveyed the research literature of approximately 240 studies, including roughly 60 tests and thousands of children and adults from all sections of the country. Most of these studies have serious methodological flaws. In only 17 of the studies is social class position of the subjects taken into consideration in some way. The distribution of SES within the U.S. Negro population is very different from that of Caucasians. At this point in history, there is a disproportionate number of Negroes at low SES levels. Social class and race are thus confounded in many comparisons. Shuey (1958) reported that investigators agree that Negroes do "relatively well in tests that are purposeful, practical, concrete and those that involve rote memory; and perform less efficiently in tests that are relatively abstract in nature and in tests involving certain perceptual-motor functions (e.g., Kohs Block Design.)" There is disagreement between investigators as to the difficulty Negroes have with verbal as compared with nonverbal test material. Shuey (1958) reports that on the Wechsler-Bellevue, the WISC, and the California Test of Mental Maturity, Negro children and adults achieved higher scores or IQs on the verbal than on the performance sections and that Negro schoolchildren scored no higher on the average on the nonverbal than on the verbal group tests. Coleman's report (1966) shows a similar pattern. Also, Lesser (1965) found that Negro children performed better on *verbal* than on *reasoning, number* and *space* sections of the tests he administered.

Comparing Negro and white children of first and fifth grade divided into three social class levels, Deutsch and Brown (1964) found (by using the Lorge-Thorndike Intelligence Test) a linear relationship between SES and performance level for both Negro and white groups; within this linear relationship, the absolute increase in IQ is greater for the white group than it is for the Negro. Deutsch and Brown concluded that the influence of race tends to increase as the social class level rises and interpreted these results as indicating less participation in the cultural mainstream by the middle-class Negro, while the lowest class status operates similarly for the white as well as for the Negro. Deutsch and Brown argue: "It is more difficult for the Negro to attain identical middle or upper middle-class status with whites, and that the social class gradations are less marked because Negro life in a caste society is considerably more homogeneous than is life for the majority group." The mean IQ (102) of the upper middle-class Negro group in Deutsch's study may be atypically low in view of the higher mean (109) reported by Hess and his colleagues for upper middle-class Negro preschool children on the Stanford-Binet. They also found the WAIS IQ of the upper middle-class Negro mothers to be 109. In their data, there was no mean difference between middle-class mothers and children in IQ, while the mean scores of children from working-class groups exceeded the mean IQ of their mothers by 13 points (Hess and Shipman, 1967).

3. *Socioeconomic Status Differences in Educational Achievement*

The distinction between IQ tests and scholastic achievement or aptitude tests is not clear, particularly when one recalls that Binet originally devised tests to predict school success. In this sense, school achievement tests are the criteria and IQ tests are estimates. As in IQ tests, SES differences in school performance are well known. It is not feasible or useful to review all the research bearing on SES disparity in educational attainment as indicated by tests. Several examples will serve to document the difference and indicate its magnitude. The correlation between scholastic ability and IQ scores would in itself be expected to produce differences in educational achievement among different SES levels.

The extent of this divergence is shown by a survey of the school system of Chicago (Havighurst, 1964). The 21 districts were ranked by an index which combined the median family income and median level of education of adults in the area, based on census data, and a gross index, based on combined scores on two reading tests and two arithmetic tests at grade six. The top third of districts in the SES ranking ranged from achievement at grade level to achievement one grade above norms. The bottom third, with one exception, were all about 1 year below expected grade level. A similar pattern was apparent from reading readiness scores for first-grade children. In the bottom third of ranking, only 40 percent were up to standard in this crucial set of skills. These differences also apply to socioeconomic differentials between the districts with substantial numbers of middle-class Negroes and those with predominately working-class Negro populations. The technique for assigning SES ranking is, of course, gross: differentials would probably have been greater if more individualized SES information had been available.

A summary of research data, giving more differentiation among scholastic skills, is reported as the result of a study of socioeconomic status and school achievement (California Elementary School Administrators Association, 1962). This study covered 26 schools in Alameda County, California. Using Hollingshead's Two-Factor Index of Social Position, four SES groups of both Negro and white pupils were included; the scholastic measures were the Sequential Tests of Educational Progress (STEP) covering *reading*, *writing*, *social studies*, *mathematics*, *science*, and *listening*. Subjects were asked to request their parents to fill out the forms needed for assigning social status. The response of parents and, perhaps, their acceptance of the goals of the school are themselves of interest; only 62 percent of parents in low SES schools returned the questionnaires while 85 percent of parents in highest SES levels did so. In terms of the children's achievement scores, the differences among the four SES groups varied considerably from one subject to another. The greatest discrepancies occurred in science where the percentile range was from 83 for the highest SES group to 14 for the lowest. The smallest difference between high and low SES groups was in writing (75 and 37) with differences in reading scores showing next smallest range.

A third study, the most comprehensive, was that supervised by Coleman (1966). This major national study, commissioned by the U.S. Office of Education, was directed particularly to the analysis of scholastic achievement of minority groups and the factors which contributed to educational attainment. The sample was not divided by social class. Therefore, comparisons of ethnic groups with the majority group do not permit analysis of variability among social class levels within each ethnic group. Comparisons between ethnic groups and whites are confounded with SES, since the proportion of lower and middle class within each ethnic group differs. The comparison, for example, of the average test scores of the Negro and the "majority" group is questionable as a measure of the effect of ethnicity alone, since the proportion of lower class is significantly higher among Negroes than among the white group. Such differences in proportion of lower and middle class probably exist for other ethnic groups as well.

The data reported by Coleman indicate that, with the exception of the Oriental American, minority groups, i.e., Negroes, Indian Americans, Mexican Americans, and Puerto Ricans, score distinctly lower on the standard achievement tests than the average white pupils. Their scores are approximately one standard deviation below the majority pupils' scores in the first grade. At grade 12, the scores of minority groups on tests of the same types of skills, verbal and nonverbal, are farther below the majority group than at grade one. Comparison between the groups' average scores for the five achievement tests used at grade 12 showed that Negroes differed from the majority group most, followed by Puerto Ricans, Mexican Americans, Indian Americans, and Oriental Americans (who showed the least difference from the majority groups). Coleman concluded that "whatever may be the combination of nonschool factors—poverty, community attitudes, low educational level of parents—which put minority children at a disadvantage in verbal and nonverbal skills when they enter the first grade, the fact is the schools have not overcome it."

Regional differences also appear in the Coleman data. In the South both white and Negro 12th graders scored lower than their age mates in the North. This regional difference was more pronounced for Negroes than for whites, Southern Negroes scoring farther below Southern whites than Northern Negroes did below Northern whites. This regional difference did not exist at the beginning of schooling. However, Coleman points to the fact that "in the metropolitan North and West, 20 percent of the Negroes of ages 16 and 17 are not enrolled in school—a higher dropout percentage than in either the metropolitan or nonmetropolitan South." If some or many of the northern dropouts performed poorly when they were in school, Negro achievement in the North may be higher only because some of those who performed poorly have left school.

As already noted, data on achievement scores were not differentiated by social class within each minority group. However, a number of background variables of the pupils were used in computing their contribution to the total variance as compared to school variables. These background variables of the pupils were: urbanism of background (for students of grades 9 and 12), migration (for sixth graders), parents' education, structural integrity of the home, size (smallness) of the family, items in the home indicating its economic standing, reading material at home (such as encyclopedia, etc.), parental interest (talking about school matters with the pupils, reading to them when they were small, etc.), and parents' educational desires for their children. Coleman found that at grade 6, economic level of the family (based on the child's report) had the highest relationship to achievement scores for all the minority groups, while the parents' educational level had the highest relation to achievement scores for the majority group of whites. In later years, however, parents' education had the highest relation to achievement scores of the pupils for nearly all groups.

For Negroes of grade 12, the length of time in an urban environment and the (small) size of their families had approximately the same importance as their parents' education. The structural integrity of the home (presence or absence of the father) showed very little relation to achievement for Negroes. It had, however, a strong relation to achievement for other minority groups.

The position that social class-linked family experience heavily influences subjects' performance on reading tests receives support from the findings of Weiner and Feldman (1963, 1964) who reported that two reading tests in a standard battery yielded distinctly different score distributions by social class within the same school. The scores of lower class children of grades

3 through 8 on the Gates Advanced Primary Reading Test were spread over a substantially wider range than were their scores on the Gates Basic Reading Test, Level of Comprehension; the opposite was true for the scores of middle-class children. Negative effects of social and emotional impoverishment on school attainments of lower class Negro and white children have also been described by Deutsch (1960). The performance of both racial groups on the Stanford Achievement Test was significantly lower than the national norms for this test. Academic retardation of both groups increased with age. For the Negro children, this retardation was, however, significantly more pronounced than for white children. Deutsch suggested that this difference between Negro and white lower class subjects may stem from the negative feelings that Negro children develop toward themselves, partly in response to the low expectations of their teachers. The detrimental effects of racial segregation and other school qualities upon the scholastic achievement of Negro students have been documented by Hansen (1960) who reported that in an integrated school system the scores of Negro pupils on the Stanford Achievement Test increased steadily. Stallings (1960) reported similar results for 5 years following integration, with most marked progress in the scores of Negro pupils appearing in areas related to reading.

One of the most specific and dramatic statements of the relatively low educational achievement of Negro pupils in northern urban areas is found in a report on education in Harlem, *Youth in the Ghetto* (Haryou, 1964). The pupils in Harlem schools are almost all Negroes, primarily from low socioeconomic backgrounds. More than half of the students in academic high schools and over 60 percent of those in vocational schools dropped out without receiving a diploma. The performance of children in Harlem schools, at the time of the report, showed substantial decline with increase in grade. As shown in the following table, Harlem pupils were 2½ years or more behind national norms in reading comprehension, word knowledge, and arithmetic. IQ scores following a similar pattern, with average ranging from 91 at grade 3 to 88 at grade 8 for Harlem school pupils, compared to roughly 100 from New York City and, presumably, the rest of the Nation. Such data have made the problem of education of minority pupils a matter of national concern.

TABLE 2.—Median Achievement Scores

	Reading comprehension			*Word knowledge*			*Arithmetic*		
Grade	*Harlem*	*NYC*	*USA*	*Harlem*	*NYC*	*USA*	*Harlem*	*NYC*	*USA*
3	2.5	3.6	3.7	2.7	3.6	3.7	...	...	...
6	4.1	6.1	6.2	4.1	6.1	6.2	5.0	6.4	6.5
8	6.0	8.1	8.5	6.0	8.1	8.5	5.8	8.1	8.5

4. *Socioeconomic Status Differences in Other Cognitive Operations*

Some recent studies have provided more detailed information about SES differences in cognitive functioning. Cynthia Deutsch and McArdle (1967) are investigating the hypothesis that there are SES differences in auditory discrimination for white and Negro children. If such a difference is found. however, it will be relevant to recall the findings of Lesser et al. (1965), of SES differences in four ethnic groups regardless of the differences in profile of performance, a caution that applies, of course, to much of the current work on SES and ethnic differences in cognitive functions. Deutsch (1960) found lower class children to be less able than a comparable group of middle-class children on tasks requiring concentration and persistence, and to display a tendency to ignore difficult problems. Differences between low- and middle-class children also appear on techniques designed to assess developmental changes in drawing characteristics (Eisner, 1967).

Recent information on the relationship between aspects of cognitive development and maternal behavior as well as other features of the social and cultural environment (Getzels and Jackson, 1961; Kagan and Moss, 1962, Bing, 1963; Hunt, 1964; Dyk and Witkin, 1965; Busse, 1967) has created keen interest in the degree to which manipulation of the learning situation might affect the relative performance of children from different SES levels.

5. *The Quest for Linkages and Contingencies Between Culture and Cognition*

In more recent years, laboratory studies focus with increased frequency on specific variables which affect development of cognitive processes underlying the performances of children on more global intelligence tests and in scholastic achievement tests.

The studies conducted by Bernstein, Caldwell, Deutsch and Deutsch, Gray, Hess, Jensen, John, and Osler represent more recent efforts on the part of these investigators to use refined laboratory and sampling techniques to tease out the background variables related to working class children's cognitive styles and processes.

The more significant theoretical and research problem, however, is to specify contingencies between the environment and the developing cognitive styles and operations of the child and the degree to which these styles can be modified by intervention of some sort (Caldwell, 1968; Deutsch and Deutsch, 1968; Gray and Klaus, 1968; Glick, 1968; Hess and Bear, 1968). Deutsch (1963, 1965) has suggested that environmental and developmental factors interact and effect intellectual maturation through their influences on the development of the child's perceptual abilities and his language. Interrelationships between language measures and selected demographic variables, based upon the assessments of 292 children of first and fifth grades, led Deutsch to argue that environmentally deprived children are susceptible to a "cumulative deficit phenomenon," which affects both linguistic and cognitive development by inhibiting the development of "abstract and categorical" use of language.

The research of Hess and his colleagues (1965, 1967, in press) pursues the argument that early social experiences which are part of the mother-child interaction shape thought and cognitive styles of problem solving. Studying mother-child interaction styles on the basis of data gathered from 163 Negro families representing four social status levels, ranging from families with mother on public welfare to families with college-educated fathers, they attempted to identify the cognitive environment to which lower status children are exposed. Of particular relevance for the development of cognitive functioning in the child are the mother's strategies for orienting the child toward selected cues in the environment, the types of regulatory or control techniques she uses, and her patterning of stimuli to organize information for the child. The control techniques call attention to status or normative components in the situation, paraphrased as "You should do this because someone in authority has told you to do it: It is a rule" or "It is the way someone your age or sex should behave." Or the control techniques refer to subjective personal status, in which the appeal is to how one's actions will make other people feel, or to the consequences of action apart from rules or feelings. These different techniques of control evoke different cognitive responses on the part of the child and are based on dissimilar reinforcement patterns. The orientation of adults from working class backgrounds toward external control and authority, discussed earlier in the chapter, are congruent with Hess' findings that working-class mothers use normative control to a greater extent than do mothers from the middle class and that this type of control is related negatively to the development of verbal behavior, performance on cognitive tasks, and to reading readiness, as measured by standard tests (Hess et al., in press). The ability of mothers to organize and sequence material for their children in face-to-face teaching of simple tasks by appropriate orientation and pretask information feedback, motivating specificity of language and monitoring behavior, are also related both to the mother's social class and to the child's performance in cognitive and school-related tasks.

Contingency Learning and Analysis of the Effects of Deprivation Upon Learning

The focal point of basic research and of theory with respect to deprivation is the mediation or translation of environmental press (variables) into individual behavior (Hess and Shipman, 1965; Hess, 1968). These processes are not clearly conceptualized in the available literature. They follow, to some degree, the principles of learning and behavior acquisition already known to students of human behavior. The application of some of these principles was summarized for this Task Force by Gewirtz.

1. *The Conceptual Milieu*

Empirical work to date shows that it is both reasonable and profitable to conceive of social behavior as following the general laws of behavior, but with the relevant stimuli mediated by the behavior of persons rather than by other environmental sources. On this basis, our study of human social behavior proceeds in the same way as learning-based studies of other behavior classes: by analysis of the variables in the environment, both present and past, that *control* behavior. Such concepts generally provide a flexible model for ordering the complex developmental patterns characterizing the child's socialization by detailing the changing conditions of environmental stimulation accompanying his development. The changing capacities of the child through developmental processes, such as those indexed in naturalistic approaches (e.g., Piaget, 1951) by the terms "organismic maturation," "stages," "critical periods," and the like, might qualify this approach but would hardly change its essential features.

2. *Definition of the (Social) Environment*

The terms *environment* and *stimulation* occur often in everyday discourse. Characterized as "wholesome" or "rich," these terms are frequently invoked as causes of certain patterns of development, and occasionally as labels for experimental or remedial treatments. However, these are neither universal definitions nor consensually defined operational indices of environment and stimulation, nor of "love" or "warmth." Without behavioral-outcome criteria these concepts are essentially useless for understanding both human social development and behavior technology, and may be best suited to literary ventures.

To be useful in an analysis of the impact of the cumulative experience of the child on his current and future behavior, the concept of environment must have a basis in functional criteria, specifically the control of or impact on behavior by stimuli. Emphasis must be placed simultaneously on the environment and the behavior of the organism, and there can be no fruitful independent definition either of stimuli or of behavior. Under our definition, environment is restricted to those stimuli impinging upon the organism that affect his behavior in some way. As such, stimuli can play a number of roles defined by their temporal relation to the response (contingency): they may function to evoke, cue, or reinforce behavior. Before the immediate or long-term response outcome of a stimulus can be predicted, the role of the stimulus in the particular situation must be specified. It is axiomatic that no *acquisition* (equivalent to reinforcement, conditioning, or learning) can occur in the absence of stimuli, and the limiting case of prediction of acquisition therefore occurs when there are no stimuli available. Further, when reinforcing stimuli are available, their effects on behavior are qualified by such factors as temporal gradients of delay between response and stimulus schedules of reinforcement, and the program or temporal sequence of application, as well as by whether or not there are background events present that mask (or change) either the stimuli presented or competing responses to those stimuli. Thus, when environmental events do not occur in such a way as to be discriminable for behavior or immediately contingent upon it, they are not *functional* insofar as they do not constitute stimuli for the organism (Gewirtz 1968 a and b). Under this conception, therefore, a large number of physical events that have no detectable effect on the organism's behavior would not be considered part of his environment; and, similarly, movements by the organism are not considered responses until they are observable and are shown to be under the control of stimuli. Thus, emphasis must be on the stimulus-response unit; a response can only be defined in terms of the preceding and following stimuli that control it, and a stimulus can be defined only in terms of the responses it controls.

The *social environment* consists of those functional stimuli which are provided by people; and *adaptive behaviors* (for the most part termed *social*) are those under the actual or potential control of (for the most part) social stimuli, in either their acquisition, maintenance, or both. The term social learning simply defines a category of learning that involves stimuli provided by people but that follows the same principles as nonsocial learning.

In a sense, concepts of learning belong to every theorist who studies systematic effects of recurring environmental conditions on behavior. This is true whatever the theoretical approach, its degree of development, the particular phenomena ordered by the theory, its language, the level of analysis and detail employed, and the particular heuristic tone given to the concepts (e.g., behavioristic, cognitive, or even animistic). Learning concepts are at issue whether a theory refers to "ego enhancement, growth or changes," to the "growth of self-awareness," or to the "development of a substitute interpersonal attachment." In the same sense, concepts ordinarily grouped under such headings as "ethology," "perception," or "intelligence," which have evolved to order environmental phenomena effecting changes in behaviors, *overlap* learning concepts at various levels as well as each other.

3. *The Facilitation of Valued Behavior Outcomes*

Socially desirable behaviors can be made more likely to occur in unified groups as a result of the application of equivalent environmental processes to all of them. This holds particularly for attempts to raise the incidence of socially desirable behavior classes from zero to low initial rates. To facilitate the emergence and strengthening of valued adaptive and coping behavior outcomes as well as behaviors that are under the control of a variety of social events and combinations (e.g., attachments) and to effect early dimensional and contextual learnings, operations of several types can be applied—reinforcement, extension, shaping, etc.

4. *Implications of the Analysis*

In relation to the concepts for environmental control over behavior, the present analysis has emphasized the learning *contingencies* provided to the infant by his parent caretaker and the valued behavior outcomes achieved through the control of these contingencies. These contingencies are the basis for the infant's acquisition of patterns of social behavior which are under the control of social discriminative and social reinforcing stimuli. Instead of stressing which or how many of a given class of stimuli are provided to the infant, this analysis has emphasized whether or not stimuli available to the infant are functional for him and whether or not these stimuli, paired with his responses, comprise effective contingencies for learning.

5. *Specific Implications of the Provision of Complex Stimuli*

The stimuli which can lead to the acquisition of valued behaviors by the developing child can be referred to as "abstract stimulus complexes" (e.g., stimulation, love, mothering). The following are some specific implications of assumptions of stimulus provision and control outlined here:

a. The components of these stimulus complexes can be dispensed only as physical stimuli. This is, they must be visual, auditory, tactile, or olfactory, or combinations of these types of stimuli. From the earliest phases of an infant's development, the component elements of these stimuli may operate as *unconditioned* evoking or reinforcing stimuli for the infant. These same stimuli cease to be functional for the infant as his responses to them habituate.

b. An abstract stimulus complex has functional significance for the infant only to the extent that it has involved effective learning contingencies for him. (Component elements of the stimulus complex may also provide unconditioned stimuli for the infant's responses.)

c. The infant's responsiveness to stimuli (in this case, social stimuli) appears to be established and maintained by unconditioned and conditioned reinforcing stimuli dispensed by people in his environment. In terms of this working assumption underlying the present approach, the proposition that the human infant has certain *innate* needs for social stimuli (such as mothering and love) appears only remotely useful heuristically. Under the learning model, the infant cannot thrive in an environment devoid of stimuli to establish and support his behavior and learning. Also, in the context of this model, if an originally neutral stimulus is provided by the infant's caretakers as discriminative for reinforcement, it will acquire reinforcing value for him.

d. It is apparent that there will be differences among children in the composition and importance of a stimulus complex as a result of the differing conditions existing in the early establishment and maintenance of such stimulus complexes. Stimulus complexes presented by the child's parent or main caretaker can be most effective as reinforcers. These complexes are usually composed of the particular stimuli which were salient in the acquisition of reinforcing value by the stimulus complexes. However, if an indentical stimulus complex is offered to the child by others, its reinforcing value for the child may differ, until he learns the functional equivalence of the diverse stimulus sources.

Various stimulus complexes intended by the dispenser to represent stimulation or love to the child will not be efficient as reinforcing stimuli because they have not been conditioned as such in behavior settings different from the ones in which the child's basic learnings occurred. Children will also differ in regard to the relative importance these conditioned reinforcing stimuli have for them. They will differ, too, in regard to the amount of the stimulus considered sufficient and the rate at which they have learned to receive it.

e. There is a fallacy in the proposition that simply giving a child "enough" stimulation, attention, or love can compensate for an earlier "inadequate" supply of these stimuli. A sudden change to a higher rate of stimulus provision, whether or not the stimuli are provided contingent upon behavior, can bring about abrupt disruptive changes in many interrelated behaviors, including social behaviors, and can lead to new behavior patterns which may differ greatly from those that might have been adopted otherwise. This disorganization, actually created by the child's transition to the new caretaking setting, may be used under a long-term deficiency-hunger model as an index of the inadequacy of the supply of these stimuli received by the earlier setting. Changes in existing habit systems toward valued patterns of more social and mature behaviors may occur when the stimuli in the new setting are repeatedly presented to the child in effective contingencies with valued behaviors, when this was not the case in the prior setting. These newly established behavior patterns may, in turn, serve under the deficiency model to indicate that the child has become more "secure," since he no longer *appears* to need so much attention and love; and it is thus often concluded that the "hunger" for these stimuli has been reversed. Also, if it is assumed that the conditioned-reinforcer class dispensed is the most effective one for the child, different discriminative stimuli can control the occurrence of behaviors for that reinforcing stimulus in a new setting (e.g., a move to a new home or into a therapeutic setting).

f. Environmental events which have no unconditioned stimulus value and have not been previously paired with any positive or negative reinforcement will not, even when associated with intense affect responses, have any effect on the child's behaviors.

The final assumption brings all the earlier ones into focus:

g. A child's social learning is characterized by his acquisition of social-behavior patterns which are under the control of social discriminative and reinforcing stimuli. This process is dependent upon the contingencies with his behaviors that are constituted by the stimuli provided to the child in his behavior setting. In this context, caretakers can be pivotal in providing efficient conditions (contingencies) for optimal social learning. Unfortunately, this is rarely the case. The approach often taken by parents, as well as by many theorists in this area, is to stress only the provision of a commodity (as food or love) and not the circumstances under which these commodities are given. More specifically, the question is how do these potential discriminative and reinforcing stimuli influence the child's behavior? It is important to consider this latter point, which is compatible with the approach to adaptive behavior in general psychology, for it is the key factor in the child's social learning.

It is thus almost a corollary of the conceptions summarized here that the efficiency of research and engineering endeavors could be greatly increased simply by attending under an instrumental-learning conception to the stimulus events that can affect behavior, rather than by using gross analyses of the impact of relatively unspecified stimuli on relatively unspecified behaviors. A major projection of the preceding analysis is therefore that approaching contexts for systematic behavior change with articulate conditioning concepts and a focus on selected stimuli and behavior can provide considerable leverage on the technological details required for bringing out the potentialities of children of all types.

Linguistic Functioning in Children

1. *Earlier Approaches to the Program*

Throughout the 19th century, the United States provided an excellent opportunity for the study of the process by which ethnic groups learned English and lost their original language. Linguistic assimilation proceeded more or less rapidly, but the opportunity to study the process was lost. The educational and social problems of the large cities were qualitatively similar to those now current. In 1865, the underprivileged and "dangerous" classes of New York City were the Irish and Germans; after 1890, they were more apt to be Italians and Jews; and in the 1950's, Negroes and Puerto Ricans. The older groups moved regularly at various rates, but upward, in the socioeconomic scale; their antagonisms faded and they joined with the previous residents in their opposition to the new immigrants.

There are several groups of Americans in the United States today for whom this pattern has not prevailed. The Spanish-speaking "Mexican Americans" of the Southwest seem to have established a more stable bilingualism; this may be true of the Puerto Ricans as well. There is a clear tendency for the second generation to follow the shift to English, but it is held back by a number of factors. Many of the indigenous Indians have lost their native language. Others have kept it, but the shift to the value system associated with the American schools has not taken place. The largest group, the Negroes, has no foreign language to cope with, although their linguistic differences are subtle and complex. These four groups are affected, in one way

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or another, by the color bar which prevails in our society. There is a fifth group which is not affected by the physical barriers to upward social mobility nor by language problems—southern whites of Appalachia. In the ghetto areas of Cleveland and other midwestern cities, they occupy the same low position as the other groups considered here. Clearly, cultural and historical factors are more important with this group than the immediate effects of language and color discrimination.

Finally, it is worth noting that there is a group which is separated from the main body of citizens by both color and language—the Chinese and the Japanese—who have not found it difficult to make use of the American educational system.

Before the 1960's the only relevant research was carried on in the classrooms by educators. Loban's logitudinal studies of California schoolchildren (1965, 1966) compare Negro children with other groups; but from a linguist's viewpoint, the information is very scant. All data are given as numbers of deviations from standard English; so that one knows neither whether a regular rule is involved on the part of the nonstandard dialect nor what the underlying system is. Hunt's studies of the written compositions of schoolchildren (unpublished 1966) give data on some overall measures of sentence form and length, but the problem remains of relating this information to the linguistic competence of the students and ultimately to their verbal skills.

Recently, linguists have become interested in the language used by Negroes in the United States. McDavid and Austin (1966) traced the traditional dialect markers in the forms elicited from Negroes in Chicago. Shuy (1967) included the Negro population in his study of sociolinguistic stratification in Detroit, and Levine and Crockett are now supplementing their study of the speech of residents of Hillsboro, N.C., with an examination of the responses of Negro speakers. One assumption behind this work has been that exact knowledge of the differences between the speech of Negro speakers and of others will be helpful in solving educational problems. Much of the interest in the details of dialect patterns has been on the part of those interested in the improvement of speech, although it has not been established that closer approximation to standard English speech will significantly change employment opportunities. Other work has had a more general educational orientation. Bailey examined the speech of Tougaloo college students (unpublished 1966) with an eye to developing educational methods. The Urban Language Study at the Center for Applied Linguistics, now under Shuy, is currently oriented toward applying cultural and linguistic information directly to educational problems.

Of the various educational problems, it appears that reading is the most urgent and the most critical. Project Literacy (1964–67) has attempted to involve linguists as well as psychologists in basic research on reading, and it was felt that data on the linguistic patterns of the deprived groups in the urban ghettos would be essential. The work of Labov and others (1966, 1968), centered in New York City, is concerned with structural differences between nonstandard Negro English and the standard English of the classroom, and provides data indicating that reading problems are directly related to differences in linguistic structures.

Some work has also been done on the broader question of the verbal culture in which the linguistic structures are embedded. One part of Labov's studies is explicitly concerned with this aspect; Hannerz (1967) at the Center for Applied Linguistics has produced several anthropoligical studies of verbal culture; and recent work of Kochman in Chicago (1968) has amplified our knowledge of this area.

Comparatively little work has been done on the language of the other groups discussed above. Gumperz, Fishman, et al. (1967), have been engaged in studies of Spanish-American bilinguals in New York City, and the earlier work of Barker (1947) dealt with Mexican Americans. Enough is known about the linguistic problems of certain Indian groups in the Southwest to suggest that imperfect ability to read and write standard English is a serious impediment to educational advancement.

Any discussion of class differences in the use of language must take into account the ideas put forward by Bernstein (1964) that there are two fundamentally different "codes" used by speakers of a language—a "restricted" code employed among those who know each other quite well and share a great deal of common information, and an "elaborated" code in general use by the middle class and in schools, which is more explicit and presupposes less shared information. Bernstein suggests that lower socioeconomic groups are handicapped in not having access to or practice with the elaborated code. There have been many proposals for applying Bernstein's ideas to concrete situations in the United States, but again there has been little connection between the general notions and the linguistic concepts of systems and structure.

The most influential work on class and ethnic differences in verbal behavior has been that of psychologists who have not had access to linguistic information (Deutsch 1967).[4] In general, work along these lines has helped to establish the concept of "cultural deprivation" as embodied in the planning for Operation Headstart. Negro and lower class children regularly score lower on a whole range of tests of verbal behavior. However, there have also been many investigations of class differences which report the same rate of development for children of different backgrounds; for example, the development of "paradigmatic" responses in word-association tests has been taken as a measure of verbal development and Baltimore slum children actually surpass suburban children in the first grade, according to the index (Entwistle 1968). A great deal of the testing of children's verbal abilities has taken place in the same environment as the school situation itself, and such tests therefore register the child's reaction to the social context primarily and only secondarily to his actual verbal skills.

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[4] The tests often used unfortunately include some contrasts which are not perceived normally by Negro children, such as *Ruth—roof;* or *pin—pen,* so that Negro subjects who score lower do not necessarily suffer from impaired perception of the sounds of language.

2. *Our Present Knowledge of the Verbal Abilities of Underprivileged Groups*

The area in which one can speak with more certainty concerns the effect of differences in linguistic structure which interfere with learning of standard English in school. This type of linguistic interference follows the general patterns outlined by Weinreich in *Languages in Contact* (1951); although our knowledge is not yet precisely enough to allow us to predict that a particular kind of interference will in fact take place, we can say in what direction interference will take place if it does occur and trace certain effects directly to the contact language. We can, for example, trace the interference of Puerto Rican Spanish with English in the substitution of final *-ng* for *-m* or *-n*, or the confusion of *seen* and sin. Our analysis of nonstandard Negro English (NNE) is now far enough advanced that we can explain the occurrence of *-s* in *I gots to do it or He can gets hurt:* NNE has no third singular *-s* at all, and the rule for placing it in standard English (SE) has to be learned entirely from outside the child's basic grammar. The same can be said for *I don't know who book it is,* since there is no possessive *-s* in attributive constructions. We also find, for example, that Negro children preserve the order of direct questions in embedded questions, as in *I ax him did he do it,* for the special rule for placing *if* and re-reversing subject and tense marker is also absent. Negro children have great difficulty learning the standard rules for negatives: *He don't never do it* follows an obligatory rule of negative concord in NNE, which is optional in white nonstandard dialects.

Such knowledge can be extremely helpful for teachers of English, for they can direct their efforts efficiently at the most general rule which must be learned or unlearned. But none of the points mentioned above will show any misunderstanding of the teacher's language by the student. Repetition tests show that children have the capacity to perceive and understand the SE forms, even when they cannot reproduce them in speech. Misunderstanding takes place, but not at the level of fundamental grammatical structures such as these. It is far more likely that the teacher will misunderstand the student. One point where such misunderstanding has been noted is the verb *be* meaning 'habitual, general condition' in NNE, which has no SE counterpart. Thus a Negro child who says to a teacher *I be good* may mean that he is habitually good, but may be understood by the teacher to mean that he will be good in the future. The most likely source of misunderstandings occurs when a Negro or Spanish-speaking child reads aloud; there are many homonyms in their speech which may give the teacher the impression that they have read incorrectly, and the teacher may give an incomprehensible correction to the child without realizing that it is a matter of pronunciation rather than reading. Thus a teacher may hear *He like me* for *He liked me* and automatically disapprove: but a child who rarely pronounces the *-ed* in this position may have great difficulty in understanding the teacher's correction. Thus it becomes crucially important to distinguish between mistakes in reading and differences in pronunciation, a distinction which has not been made explicit in previous texts on the teaching of reading. We now have the knowledge necessary to teach such a principle effectively.

However, such linguistic interference recedes in importance when we consider that children in the ghetto show across-the-board deficiencies, and they do not do relatively worse in reading than in arithmetic. It has been pointed out above that IQ tests, reading tests, and perception tests are affected by the over-all setting in which they are given. Sociolinguistic studies of the effect of topic, language, and speakers upon speech forms (Ervin-Tripp 1964) allow us to understand how remote such tests may be from the actual competence of the children tested. Until psycholinguistic tests in schoolroom situations are controlled by comparable tests in environments more favorable to children in the ghetto, they will not give us the fundamental data we need on the underlying abilities of the children concerned. However, there is some data now available which points to limitations on children's learning abilities stemming from parent-child interaction. Observations of parents instructing children now being carried on (Baldwin, Hess, and Shipman, 1965; Komii and Redin, 1967) in semi-laboratory settings do show considerable differences in the way in which parents transmit information to children. Further direct observations of peer group behavior in the ghetto show that the vernacular culture does limit certain explicit types of verbal inquiry. We do not find members of such peer groups asking for the meanings of words, nor asking for spellings. The underlying forms of certain vernacular words which are never spelled (such as *lodee*, a game, or *war-lord*, a status) are not clear and such words undergo rapid evaluation. But this is also true of any words confined to pre-adolescent white culture as well.

There is also some evidence to support the notion of a restricted code or form of communication. As noted in an informal study of Schatzman and Strauss of accounts given after a disaster (1955), less educated, lower class speakers are less able to take the point of view of the listener; they are apparently more used to communication with those who share the same body of knowledge. Their accounts are more centered around the first person and are more concrete than those of middle-class speakers. But even though there are some comparable indications for schoolchildren, most of this data is tentative, sketchy, and in unpublished form. It is possible that such observations are the product of the stimulus—that the questions asked are those most congenial to, or most often answered by, middle-class speakers.

More solid and reproducible data are available on the norms, values, and expectations in regard to verbal behavior. The work of Lambert and his associates (1960, 1967) has established the existence of values associated with the use of particular languages or dialects—values shared by those on both sides of the ledger. Thus, both French Canadians and English Canadians agree that speakers of French are apt to be less intelligent, trustworthy, successful, etc. as shown by their uniform reactions to the "matched guise" tests. Similar values cluster around the use of Canadian French vs. Continental French. In New York City, it was found that there is a uniform set of subjective reactions in which those who use a stigmatized feature the most in their own casual speech are quickest to stigmatize others for the use of this feature. Furthermore, it appears that there are opposing sets of values attributed by most speakers to certain forms or dialects, e.g., suitability for a hierarchy of job classifications shows high ratings for the speakers rated lowest on an estimate of their physical toughness or skill in fighting. Such values are apparently acquired in late adolescence, and both values seem to be held most clearly by the middle class. The indications are that such stereotypes are imposed upon all members of a society as part of the view of the dominating subgroup. Thus it is likely that the self-hatred characteristic of many minority groups is reinforced by these social values attributed to their speech forms. Tucker and Lambert's work in Tougaloo (1966) showed that Negro college students follow the same pattern as New York City residents in attributing the highest social values to the "network" style of English heard in the mass media. It follows that most lower class citizens acquire these values at a point in life where their own style is relatively fixed, and they are reinforced in a low opinion of their own speech.

Within any formal interview or test situation, such middle-class values will be dominant in American society. The positive values which support the speech forms of the dominated groups will not emerge. Folklorists have been aware for some time that urban culture was richer than casual observers would assume. Recent studies of peer groups in spontaneous interaction in Northern ghetto areas show that there is a rich verbal culture in constant use. Negro children in the vernacular culture cannot be considered "verbally deprived" if one observes them in a favorable environment—on the contrary, their daily life is a pattern of continual verbal stimulation, contest, and imitation. The speech event known as "sounding," "the dozens," "signifying," and by many other names, occupies a great deal of time for adolescent Negro children: it is a system of ritualized or abstract insults, directed against the opposite party's parents, or ritualized personal traits, in which each effort is evaluated by spectators and usually with a definite outcome. A large repertoire is prized, but only if accompanied by the ability to make original changes, and to use modified forms appropriately in the immediate context. There is also a large body of rhymed epics in the oral literature, known as "toasts" or "jokes"—works of high poetic quality in which certain modifications and new combinations are admired and permitted. Such toasts, which may run to 50, a hundred, or even 200 rhymed couplets, are known in whole or in part by many boys who would be considered nonverbal in a school situation. There is now developing in the ghetto areas, a body of cult mythology and ideology associated with black nationalism, and a new cultural set which prizes book learning, reading, history, and science, as long as it is not associated with white culture. There are many other speech events associated with the vernacular culture of the ghetto: jokes, songs, narratives, and of course the hip vocabulary itself. All of these reflect the value system of the vernacular, and because it is opposed in many ways to the standard culture of the school, it does not appear in school contexts. The bars against obscenity, violence, and agression are sufficient to keep most of this verbal culture well out of sight; the growing hostility to white culture and preference for separate values complete the division. Most white teachers simply do not know of the existence of the ghetto culture, except in the diluted and bowdlerized form of "folk songs" current in the white urban milieu, such as John Henry spirituals or gospel singing.

Some of the most important findings in the New York City work relate to the difference between the school performance of isolated boys, not personally involved in the vernacular culture, and full peer group members. The former show reading scores which are only 1 or 2 years behind grade with several individuals ahead of grade; the latter show records which are much poorer, with no tendency to follow a regular pattern of learning. The verbal leaders of the peer groups are not necessarily good readers in school—in general there is no connection between verbal skill in the street culture and verbal skill in school (Labov and Robins 1968). Thus any educational testing which does not distinguish these two groups in the classroom (and there are no programs which do) will not show the problem in its sharpest form.

Finally, it should be noted that the sterotypes mentioned above are also held by teachers. There is research which indicates that teachers' beliefs about the intelligence of their students affect the performance of these children. It follows that teachers' performed expectations about the performance of underprivileged students will contribute to the educational failure discussed here.

Deprivation and Linguistic Functioning in Adults

Aged persons whose sensory capacities diminish are being shutoff from sources of information which have served them well in the past. This raises questions such as: (1) whether the reduction in visual information will also produce deficiencies in iconic representations (which, presumably, could go on even though no new information is added), (2) whether it can be compensated by sensory information of a different modality, and (3) whether the symbolic and inactive modes of representation will be also affected.

Changes in cognitive and linguistic functioning represent some of the best documented trends in psychological research on aging. Differential decline of intellectual functions, for instance, has been analyzed in some detail and for a good many years (Jones and Conrad, 1933); the dependency of this decline on the original level of functioning has been studied (Miles, 1933 Owens); the effects of test administration (Lorge, 1936) and task difficulties (Riegel and Riegel, 1962) has been explored; and, more recently, the relationship between sociological-historical and individual changes (Schaie, 1965; Baltes, 1968) as well as questions of survivorship and dropout (Riegel, Riegel, and Meyer, 1967). Research data suggest that high correlations exist between intellectual functions and education, attitudes, interests, income, health, etc. (Reigel, Riegel, and Skiba, 1961). Earlier studies by Jones and Conrad (1933), using successive sampling procedures and thereby recruiting persons less and less willing to participate and generally withdrawn from social interactions, have shown that less cooperative *S*s are of lower intelligence (see also Riegel, Riegel, and Meyer, 1968).

Originally, investigations of sensory deprivation were concerned with effects upon social and personality adjustment and stability. More recently, however, the impact upon neurophysiological as well as cognitive variables has been studied (see Schultz, 1965). For instance, Bennet, Diamond, Krech, and Rosenzweig (1964) observed that enriched experience affects brain weight and biochemical activity. Deprivation has lesser effects in the opposite direction. Specific sensory deprivation produced compensation in terms of brain weight and biochemical activity in cortical areas serving other sensory modalities. Age differences were found to be of minor importance.

Deficiencies of central nervous functions caused by trauma, injuries or hemorrhages, or as a project of a nonspecific aging process represent biological conditions which will influence cognitive linguistic functions directly or indirectly by the severe social impact which they produce. Defects of these types, especially aphasic deficiency, have been studied for a long time and various interpretations have been advanced (see Osgood and Miron, 1963; Schuell, Jenkins, and Jimenez-Pabon, 1964; and Tikofsky, 1966). In general, however, the relationship between these pathological conditions and a decline that is due to a normal, slow aging process has not been sufficiently explored and this lack of information has not only hampered the diagnosis of these syndromes in aged persons but has also led to an oversimplification of most interpretations.

In spite of many different terminologies introduced during the past hundred years, aphasia is still regarded as being either primarily expressive (Broca syndrome), receptive (Wernicke syndrome), or central. This distinction has been reconfirmed by Goodglass, Quadfasel, and Timberlake (1964) and to a lesser extent by Schuell, Jenkins, and Carroll (1962).

Another important topic is the distinction between sequential and simultaneous structuring of cognitive-linguistic information, a distinction which is roughly analogous to that of a syntactic and semantic analysis (Riegel, 1968b). In reference to the aphasia research, Efron (1963) has raised the general question whether aphasia is a defect in temporal processing of perceptual-cognitive information rather than a language disorder. This suggestion relates to the difficulties faced by both aphasic and aging persons, as well as many other deviant groups—for instance, the mentally retarded (Hagen, Winsberg, and Wolff, 1968) and schizophrenics (Stern and Riegel, 1968)—namely, the difficulty in identifying the structure of information received and in structuring the information produced.

Research on aging has done very little in exploring the effects of sets and attention upon performance, but the few studies that have been made on both cognitive as well as noncognitive factors, have provided the most dramatic results (Riegel, 1965, 1968a; Botwinick, 1959, 1967; Maccoby, Jones, and Konrad, 1968).

Pathological conditions of the central nervous system—as studied in the aphasia research—will be closely linked and intertwined with those of sensory and motor deficiency. Again, the questions arise as to the possible compensation across senses and as to the spreading of deficiency over other or the whole range of cognitive linguistic functioning. While studies of speech and language pathology may shed some light on the cognitive and communicative defects of aging persons, these explorations suffer from the failure to establish sufficiently valid distinctions between normal and abnormal processes of aging (see Davis, 1968).

The Role of Verbal Mediation in Mental Development

1. *The Nature of Mental Development*

The importance of current theory and research pertaining to verbal mediation is highlighted mainly by two factors: (a) the conceptions of the nature of mental development, and (b) social concern with the educational problems of children called "culturally disadvantaged."

Historically and currently, ideas about mental development may be characterized in terms of the relative degree of emphasis given to (a) growth or developmental factors, and to (b) learning or experiential factors.

The *growth-readiness* view of mental development holds that certain organized patterns of growth of neural structures must occur before certain experiential factors can effectively contribute to development. Rate of intellectual development is seen as related primarily to internal biological mechanisms and their orderly sequential growth, rather than to inputs from the environment.

The opposite viewpoint emphasizes learning as a major causal factor in development. The most elemental and radical statement of this position is simply that humans possess the neural structures for the formation of associations between the sensory inputs from receptors and the output mechanisms of the effectors—in short, the capacity for acquiring S–R habits. The sets of habits which we identify as intelligent behavior are seen as being built up through the acquisition of habits and chains of habits which interact to produce complex behavior. Mental development thus is seen as the learning of an ordered set of capabilities in some hierarchical or progressive fashion, making for increasing skills in stimulus differentiation, recall of previous learned responses, and generalization and transfer of learning. In recent years this viewpoint has been most vigorously espoused by Robert M. Gagne (Gagne, 1965). He refers to it as the *cumulative learning* model of mental development.

Jensen's view of these contrasting theories is that, when each is stated in an extreme form, they serve as a useful set of coordinates in terms of which the true nature of mental development may be projected. One can represent the importance of developmental factors on the *X* axis and the importance of experiential factors on the *Y* axis. Various types of performance can be represented by their locations in this space, and for some of these the location will depend upon the age of the individual. For example, developmental factors may be relatively important in vocabulary acquisition in early childhood while experiential factors may be much greater in importance for vocabulary acquisition in teenagers. Also, vocabulary acquisition in early childhood may depend less on developmental factors than, say, ability to copy geometric forms of varying complexity (Ilg and Ames, 1964).

2. *The Recent Importance of Mediation Theory and Research*

In recent years the cumulative learning model seems to be most in tune with hopes for improving the educability of children from poor families. Those aspects of behavioristic learning theory which come closest to dealing with intelligence have been seized upon as a means of explaining social-class differences in manifest intelligence and scholastic performance.

Mediation theory was developed by behavior theorists specifically to comprehend those forms of behavior classed as "thinking." Disadvantaged children are especially characterized by deficiencies in those behaviors for which mediation processes are invoked as explanatory concepts. It is apparent that cognitive proficiency depends upon covert, self-initiated intellectual processes, and the only formulations of these processes which seem to present distinct possibilities for manipulation by strictly behavioral means have been the S–R mediation theories. The guiding hypothesis of such works is that the main disadvantage of the "disadvantaged child" is inadequate exposure to the particular stimulus inputs which, for most children, are responsible for the learned forms of behavior we call intelligence.

3. *Recent History of Research on Mediation Processes: Russian Work*

Although the concept of verbal mediation may be traced in its various forms back to antiquity, it was probably not until Pavlov that the concept emerged from philosophical discourse into the realm of experimental science. Pavlov referred to speech (or other symbolic behavior) as a second signaling system, as distinguished from the first signaling system consisting of responses conditioned to the impingement of physical stimuli on the sensorium. It was apparent from Pavlov's studies that as individuals grow from early childhood to adulthood, their overt responses to stimuli are increasingly mediated through the second signal system.

The stages through which this development occurs have been intensively studied by students of Pavlov and by later Russian psychologists, most notably A. R. Luria (1961). Both developmental and learning factors are clearly evident in Luria's research on the verbal control of motor responses in children. It is the internalization of speech and its capability of governing behavior that Russian psychologists such as Luria (1961) and Vygotsky (1962) see as the basis for abstract and symbolic thought.

The techniques developed by the Russians are powerful tools for exploring covert thought processes. Probably no more refined techniques have been devised for studying the development of meaning, concepts, semantic equivalence, and covert verbal processes involved in problem solving.

4. *Types of Mediation Processes*

In studies of human learning, mediation nearly always refers to *verbal* mediation. In the most general terms, mediation refers to all mental processes that intervene between stimuli and responses when the relationship between these two sets of events cannot be attributed to simple associative processes. In most cases, the intervening processes are conceived of as covert verbal responses to external stimulus situations; the verbalizations act in turn as stimuli for other responses.

Most mediational processes may be classified according to their effects into one of two broad categories—(a) those that make for stimulus *reduction* or selection, and (b) those that consist of stimulus *elaboration.*

Learning is facilitated in complex stimulus situations when the learner pays attention to only limited aspects of the stimuli and ignores those aspects which are irrelevant to mastery of the responses to be learned, the concept to be attained, or the problem to be solved. Learning or problem situations can elicit previously acquired mediators or "sets" in the learner which permit him to reduce the problem to its essentials. This is a form of mediation in that the subject is not responding to the entire stimulus complex but rather to his self-initiated restructuring or abstraction of it. It is the difference between acquiring an S–R association and an S-r-s-R association, where the mediating links, r-s-R have been previously acquired by the subject.

On the other hand, in relating *simple* stimulus situations, such as learning paired associates, it is to the learner's advantage to *elaborate* on the stimulus elements, as by recalling other associations to these elements, thereby imbedding them in a larger associative framework, investing them with meaning, etc.

Most, but perhaps not all, forms of verbal mediation depend upon an active, self-initiated, conscious process in the learner. Relatively passive or automatic responding in the learning situation is generally incompatible with mediational processes, which depend upon the subject's activity, usually covert verbalization.

A number of different mediation phenomena and paradigms have been subjected to experimental study. The most prominent phenomena are listed below. They all share in common the important fact that they are forms of verbal mediation which occur "naturally" (that is, they are not just contrived experimentally) and yet they also lend themselves to being manipulated experimentally. Most important is the fact that these forms of mediation can be learned or at least enhanced by training and practice, and all are known to facilitate learning, concept formation, and problem solving.

a. Labeling.—Labeling or assigning names to things is perhaps the simplest instance of the "elaboration paradox"—that is, the fact that in some situations it is easier to learn more than less. A number of studies have shown that free recall of a number of familiar objects or pictures presented only once is facilitated in preschool children and in primary grade disadvantaged children if the children name the items while they are being presented. Older children (beyond 6 years of age) show little or no increase in amount recalled when they are told to name the items or presentation. Presumably the majority of children beyond 6 years of age spontaneously make some overt or covert naming response to the items, so that being instructed to do so adds little to the facilitation of recall.

One of the important differences we find between middle-class children and culturally disadvantaged children is not in their ability to name things but in the strength of their tendency to do so spontaneously without being asked in situations in which learning is markedly facilitated by naming the items to be recalled or the elements of the problem to be solved.

b. Mediated or semantic generalization.—Mediated generalization is the learned equivalence of stimulus elements that are physically unrelated, i.e., they do not lie on the same stimulus dimension, as in the case of primary stimulus generalization. Mediated generalization, especially semantic generalization, is of interest in that it indicates that certain self-generated stimuli (covert verbal responses) are elicited by the external stimulus situation and become conditioned to it as well.

Semantic generalization is of special interest to developmental psychologists because young children do not show it and its appearance and increasing strength in the age range from 5 to 7 is indicative of the development of the verbal mediational system, a system which is of great importance to school learning. Mediated generalization is also the basis for categorizing, an important intellectual ability on which great emphasis is placed in early childhood programs aimed at facilitating cognitive development.

c. Far transposition.—In the transposition paradigm the subject learns a discrimination between two stimuli which have values at two different points on some stimulus dimension (e.g., size or brightness). After the discrimination is learned, two new stimuli are presented, representing different points on the stimulus continuum and the nature of the subject's transfer is noted.

In *near* transposition the subject learns the discrimination 1− vs. 2+ (1 is unrewarded and 2 is rewarded stimulus; the numbers represent values on some stimulus continuum), then is given stimuli 2 vs. 4. In *far* transposition, the learned discrimination 1− vs. 2+ is followed by, say 4 vs. 8. The predicted response would be made to value 4 if the subject's transfer were based only on primary stimulus generalization. Response to value 8 is interpreted as an instance of verbally mediated transfer. That is, the subject had not learned to associate a response to the physical stimulus, but to his verbal representation of some aspect of its relationship to the negative stimulus—e.g. "the larger (or brighter) is correct." In short, the physical stimulus elicits some verbal response and it is this verbal response (mediator), supplied by the subject himself, to which the overt response (selecting one or another stimulus object) becomes conditioned.

d. Reversal-nonreversal shift.—The reversal and nonreversal shift paradigm is based on the subject's learning a discrimination between two sets of stimuli which differ simultaneously on two stimulus dimensions, such as size and brightness. The learned discrimination involves only one dimension, the other being irrelevant. After the discrimination has been learned up to some criterion, the discrimination task is changed in either one of two ways: (a) the positive (rewarded) stimuli on the previously relevant dimension are made consistently negative (unrewarded) and the previously negative instances are made consistently positive—this is the reversal shift; or (b) the previously irrelevant stimulus is made the basis for the discrimination and the previously relevant dimension becomes irrelevant—this is the *nonreversal* shift.

The change in ease of learning reversal or nonreversal is interpreted in terms of mediated versus nonmediated learning, and the Kendlers have shown that instructions to verbalize relevant or irrelevant dimensions of the discrimination influence performance markedly and in ways that are consistent with the Kendler's mediation interpretation of the phenomenon (Kendler and Kendler, 1962). Much of the recent development of mediation theory has involved research on the reversal-nonreversal shift difference.

e. Experimental acquired mediation.—Experimental psychologists in verbal learning have studied mediation by providing conditions under which subjects learn verbal mediators and then measuring their transfer to new learning. Much of this work has been reviewed by Jenkins (1963).

f. Extraexperimentally acquired mediators: implicit chaining paradigm.—The phenomenon of apparent implicit verbal chaining as a facilitator of PA (paired associate) learning was first demonstrated in an experiment by Russell and Storms (1955). Their experiment shows that verbal mediators that are never explicitly introduced into the learning situation, but which had been acquired at some previous time, can facilitate PA learning. It is still not certain whether such mediation can take place without the subject's awareness of using a mediational process, although Russell and Storms believed that the process was unconscious and automatic. Its chief theoretical significance is that it shows the influence of previously acquired verbal associations on the learning of new associations which are not explicitly or directly related to the new associations. It suggests that a person's richness of verbal associations may provide a general enhancing and facilitating basis for new learning and thus may constitute a part of what we mean by "intelligence" and "learning ability."

g. Associative clustering.—This phenomenon is observed when a list of words which can be classified into several categories (e.g., professions, vegetables, animals, clothing, etc.) are presented in a random order and subjects are then asked to recall as many of the words as possible (Bousfield, 1953). It is generally found that the words are recalled as "clusters" corresponding to the categories and that subjects are able to recall more words when clustering is possible than when it is not, as in the case of lists of unrelated words.

The occurrence of associative clustering means (a) that the input has been actively reorganized by the subject before it is recalled, and (b) that the reorganization is verbally mediated by superordinate category labels which are apparently elicited by the presentation of the single instances of the categories. This implies a hierarchical arrangement of the verbal associative network, an important requirement for categorization, concept attainment, and related skills that are closely identified with cognitive development and intelligence.

h. Verbal self-reinforcement.—If all the immediate environmental consequences of the human learner's responses were biologically rewarding or nonrewarding, learning could proceed without the need for secondary reinforcement. In human learners the secondary reinforcement usually takes the form of an overt or covert verbal response.

It is worth entertaining the hypothesis that acquiring strong habits of verbalizing elements in certain learning situations can be a powerful facilitator of learning. The facilitating effects of such verbalization have already been demonstrated in situations where the verbalization helps to reduce the seeming complexity of the input and to focus the subject's attention on the most relevant aspects. It is not yet known how broadly such verbalization training will transfer.

i. Syntactical mediation and mnemonic elaboration.—Syntactical mediation is the most powerful mediational process in terms of its facilitating effects on associated learning.

The basic paradigm is simple. The subject is presented with a list of paired associates to learn by the standard method of anticipation. On the first presentation of the pairs the subject is instructed to make up a simple sentence which related the two items in each pair, or, in some experiments, the experimeter says aloud a sentence which serves this purpose. This is done *only* on the first presentation trial. It is found that subjects learning under such conditions learn the list in fewer trials than a control group which has been instructed only to *name* the two items in each pair on their first presentation.

The amount of facilitation of learning achieved by syntactical mediation depends upon the age and intelligence of the learner. In general, the amount of facilitation decreases from about age 7 to age 17, presumably because with increasing age an increasing proportion of children spontaneously provide their own mediation. They report this on questioning. Kindergarten children (ages 5–6), seem to benefit little if at all. This absence of facilitation below about age 6 raises the question whether children of this age are developmentally incapable of deriving benefit from this form of elaboration or if they simply have difficulty in carrying out the elaboration instructions to generate sentences under the constraints of the PA task. Many do in fact generate what would be adequate sentences for facilitation in slightly older age groups. The fact that learning is not facilitated in the younger children is consistent with other findings to the effect that under 6 years of age the child's verbalizations have little influence on his learning and problem-solving behavior.

j. Learning set formation.—Learning sets ("learning-how-to-learn") are forms of mediated transfer which may or may not depend upon verbal or symbolic processes. It is known that there is a phylogenetic gradient for speed of acquiring learning sets, and there are individual differences within species. Spiker, for example, has found a higher relationship between measured intelligence and rate of acquisition of learning sets than between intelligence and simple learning.

Learning set formation apparently involves higher order processes than conditioning or simple associative learning. Harlow's error factor theory accounts for learning set formation in terms of the extinction or inhibition of irrelevant response tendencies for certain classes of problems. At the human level additional mechanisms probably also play a part. The most important of these are attentional and problem-solving strategies which subjects learn to summon when confronted with problem situations they can classify, such classification being, in part, the mediational stimulus for evoking the appropriate strategy.

k. Cross-modal transfer.—Cross-modal transfer is not yet well understood, yet it has implications for meditation theories. Measures of cross-modal transfer may be important indices of mental development. The paradigm consists of presenting a stimulus in one sensory modality and having the subject identify it in a recognition multiple-choice test in a different modality.

5. *Current Research Problems in Verbal Mediation*

Much of the current interest in verbal mediation processes has been stimulated by the facts that (a) these processes seem to be the stuff of which abstract or conceptual intelligence is made, (b) these aspects of intelligence play a crucial role in educability—the ability to achieve scholastically under ordinary conditions of instruction, and (c) a segment of our population called culturally disadvantaged does poorly in school and on the average scores low on measures of abstract intelligence.

Jensen argues that a number of independent current research findings, mostly as yet unpublished, suggest that the views of acquired mediational skills or of a cumulative learning model a la Gagne as the basis for abstract intelligence, and of cultural enrichment or even specific training as a means of inculcating or enhancing the desired cognitive processes in disadvantaged children, will have to be supplemented and modified by taking fuller account of biological developmental factors.

This view does not deny that certain cognitive skills at some level in the developmental hierarchy cannot be specifically trained in the absence of the development of the neural mechanisms normally involved in the acquisition of these skills. But there are differences: (a) the training requires much more time, effort, precision, and control of the conditions of learning; (b) though the specific skill may be acquired, it shows much narrower transfer and in a factor analysis of a variety of cognitive tests the specifically acquired skill would probably contribute little if any variance to the "g" factor on which normally most cognitive skills are highly loaded; (c) without further specific training or practice, the specially acquired skill shows no continued growth or transfer to other new skills, and may even deteriorate; and (d) it does not seem to constitute a "quantum jump" in the cognitive hierarchy such as to support the acquisition of skills at a higher level.

There are, in Jensen's view, several lines of ongoing research which have some important bearing on the problems stated above:

a. Hierarchical arrangement of learning processes.—Sheldon H. White (1965) put forth an argument, supported by a diversity of data, that adult mental organization is hierarchical, consisting of two main "layers": (a) an association level laid down early in development and following conventional associative principles, and (b) a "cognitive layer" laid down in later childhood. The formation of the cognitive layer either begins or is most marked between the ages of 5 and 7, a period during which many signs of a change in mode of cognitive functioning are evident. Between these ages children show a transition from a type of performance in learning situations characteristic of lower animals in similar situations to a type of performance characteristic of adult humans. Some of the experimental paradigms which reveal this transition are:

(1) Narrow to broad transposition.
(2) Easier nonreversal shifts to easier reversal shifts.
(3) Onset of resistance to classical conditioning.
(4) Change in the effect of a "varying-position" condition in discrimination learning.
(5) Growth of inference in a problem-solving task.
(6) Possible interference of complex hypotheses in discrimination learning.
(7) Shift from "hear receptors" (tactual, kinesthetic, etc.) to "distance receptors" (visual and auditory) in attending to environmental events.
(8) Shift from color to form dominance in classifying objects.
(9) Development of personal left-right sense.
(10) Decrease in form, word, and letter reversals.
(11) Ability to hold spatial information through disorientation.
(12) Change in face-hand test—children under 6 do not indicate awareness of a touch on the hand if the face is touched simultaneously but report only the touch on the face. After about age 6 the child can report both.
(13) Increasing predictability of adult IQ.
(14) Internationalization of speech.
(15) Shift from syntagmatic (associations having a meaningful connection but not grammatical likeness) to paradigmatic (associations having the same grammatical form class) word associations.
(16) Increased disruptive influence of delayed auditory feedback.
(17) Shift of verbalization toward a planning function in the child's activity.
(18) Transition from social to abstract reinforcement.
(19) A number of transitions involving conservation of number, length, space, volume, etc., shown in Piaget-type studies.

The fact that so many diverse forms of cognitive behavior change rather rapidly during the years from 5 to 7 in general, and probably over a much shorter timespan in individual children, suggests the maturation of some common underlying mechanisms. To Sheldon White's list of behaviors may be added increased susceptibility to certain perceptual illusions (e.g., the spiral after-effect) and the fact that the ability to copy certain geometric figures conforms almost perfectly to an unidimensional age scale (e.g., the 10 figures in Ilg and Ames' *School Readiness*).

The shifts from the associative level to a predominantly cognitive level of mental functioning can be summarized in terms of four general transitions: (1) from direct responses to sitmuli to responses produced by mediated stimuli; (2) emergence of the ability to induce invariance on the welter of phenomenal variability; (3) the capacity to organize past experience to permit inference and prediction; and (4) increased sensitivity to information yielded by distant as against near receptors.

An important question is: can these cognitive functions be trained in children who do not manifest them normally?

b. Training cognitive skills.—The crucial question concerning the disadvantaged is the extent to which their environmental disadvantages are responsible for their generally lower scholastic achievement and their performance on mental ability tests. Thus, the real problem of the disadvantaged may be, not whether an ordinary middle-class type of environment will boost their intellectual performance up to the general average, but whether one can improve their cognitive structures by special forms of training and cumulative learning experiences which may be quite different from what is needed for normal mental development by most children.

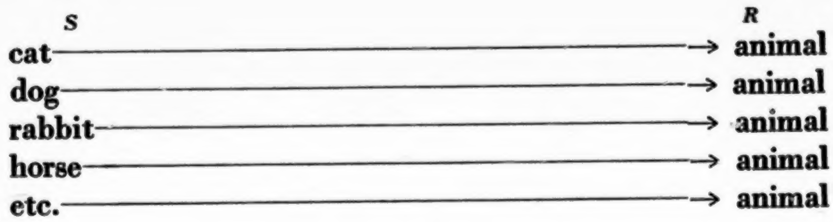
The meager gains in intelligence and scholastic performance made by general enrichment preschool programs suggest that something more and something different from providing the usual accouterments of middle-class nursery education, even in intensified form, is necessary.

The preschool programs which show some promise of improving the educability of disadvantaged children, but which have not yet been adequately evaluated for long-term (more than 1 year) effects, have one characteristic in common: the intensiveness and specificity of training. The Bereiter-Engelmann program at the University of Illinois and University of Toronto and the tutorial language program of Marion Blank at the Albert Einstein College of Medicine, Yeshiva University, are good examples of this approach. Certain specific lacks in cognitive skills are identified and are then explicitly trained.

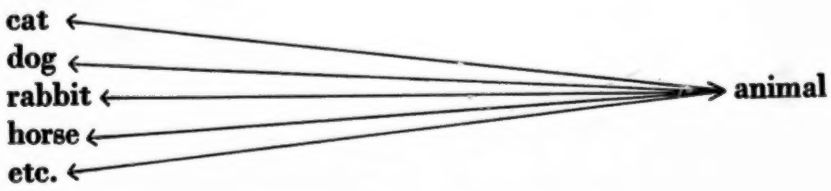
c. Associative clustering in free recall.—The phenomenon of associative clustering in verbal free recall is one of the clearest forms of evidence of conceptual, hierarchical process. For clustering to occur, the subject must actively organize the stimulus input according to certain self-provided superordinate categories.

Two studies of this phenomenon as a function of age and socioeconomic status (confounded with race, since the low SES group was Negro, the middle SES group was white) have recently been completed by two of Jensen's graduate students. Though the two studies were carried out in different school systems and with slight procedural variations, they are in close agreement in their results. First of all, in *random* lists of words which are made up so as not to lend themselves to categorization, there is no significant difference between low and middle SES groups in amount of recall over five recall trials. In categorized lists (20 words that fall into four categories) on the other hand, middle SES show better recall than do low SES children. The degree of clustering in recall increases over the five trials and the amount of recall is highly correlated with degree of clustering—this is true over trials and over subjects. Clustering and amount of recall increase with age. At the kindergarten level the two SES samples do not differ, whereas by fifth grade the middle-class group is substantially superior. Although the low SES groups' output order of recall more closely approximates the input order than is the case for the middle-SES groups, there is evidence that both groups organize the random input in some fashion, but the principles of organization are quite different. The clustering by the middle-class group clearly is more facilitative of recall. The main research problems now are (a) to determine the degree to which disadvantaged and nondisadvantaged children organize items for free recall with different kinds of principles, (b) whether the difference in types of organization is responsible for discrepancies in free recall performance, and (c) whether it is possible to improve free recall through training in categorization.

Dr. David R. Olson (Ontario Institute for Studies in Education, Toronto) has been trying the same type of free recall experiments as described above, using as subjects, among others, low SES children who have been given special training in categorization. He finds that although the children can categorize and show clustering, it does not seem to improve their recall. He hypothesizes that what they have learned in their categorization training is something like this:



rather than:



The above paradigm represents a kind of stimulated conceptual learning in which actually only single S–R units are learned; the lower paradigm represents a functional concept which can act as an organizing principle in free recall.

Examination of recall protocols in Jensen's studies shows that low-SES children produce many two-item clusters according to some functional rather than conceptual relationships. For example, *table* and *bed* are not likely to be clustered (both furniture), while *shoe* (clothing) and *bed* may be a cluster because "you take off your shoes when you go to bed." In interviews with children as to the basis for their clusters in recall, many more such idiosyncratic pair-wise clusters are found in the low-SES group. It suggests a deficiency in hierarchial organization of the verbal associative network.

Since the SES difference in clustering tendency and amount of recall *increases* with age from kindergarten to fifth grade, one may wonder why the common school experience for both groups does not produce a convergence, rather than a divergence, in their clustering tendency and recall ability.

d. Psychometrizing Piaget conservation tests.—Piaget's various conservation demonstrations would seem to involve some sort of mediation process, though its nature remains obscure. The resistance of conservation to specific training is one of its most remarkable properties and strongly suggests that the sequence of development described by Piaget is largely controlled by developmental rather than by experiential factors, although the latter may well be a necessary but not sufficient ingredient. Factor analyses of performance on a variety of Piaget conservation tests along with various standard psychometric tests such as the Stanford-Binet and Raven's Progressive Matrices show that the Piaget tests contain a high "g" loading and introduce no source of variance not found in other developmental tests like the Stanford-Binet. Dr. Read Tuddenham (U.C., Berkeley) has been developing a set of the Piaget problems into a psychometric Binet-type scale. The normative data he is collecting on Berkeley children show about the same social class and race differences as are found with standard IQ tests. If one argues that such differences are due to cultural bias in traditional IQ tests, can it be that the Piaget tasks are equally culturally biased? If so, of what, precisely, does the bias consist? Apparently it is in the capacity for some kind of mediational arousal in the case of a nominally nonverbal problem. Yet supplying verbal mediators to nonconserving children does not alter their performance.

e. The age-scale properties of figure copying.—Various geometric forms can be scaled according to the age at which, for example, 50 percent of children can accurately *copy* the figure. It is possible to make up such scales which seem to be quite invariant in rank order of difficulty across diverse segments of the population. Another striking feature of such scales is the rather discrete quality of the "quantum jumps" that exist from one item in the scale to the next, and the very few reversals of rank order of difficulty even for single subjects. Jensen is now scoring over 5,000 such tests obtained on Berkeley school children (the entire school population from kindergarten through fourth grade). The copying test consists of ten geometric figures of increasing difficulty. The test has remarkable Guttman-scale properties. The increasing difficulty of the figures may correspond to some developmental process. Dexterity, drawing ability, etc., are not important factors. A child who can copy any particular figure in the normal manner can do it also with his nondominant hand or with the pencil held between his toes. It is conceptual, not manual, performance that is scored.

In brief training sessions with individual subjects Jensen finds that it is practically impossible to teach children to copy the figures in the scale beyond the last one in the series they were able to copy without help. The child often acts quite amazed, chagrined, and frustrated by his failure to copy, say, a diamond, even after the experimenter has repeatedly shown him how to do it. The problem is not perceptual, because the child has no difficulty recognizing the deficiency of his own performance. These findings are in harmony with the unpublished work of Dr. David R. Olson.

f. Failures in mediation arousal.—Some children fail to show signs of verbal mediation in situations where it is facilitating, even though they seem to have all the necessary component behaviors. For example, in experiments on clustering, Jensen finds children who do not cluster items in categorized lists and yet who know the categories and can clarify the items when told to do so. Some children whose performance in recall of objects is facilitated when they are told to name the objects do not use this technique unless they are told to do so. It is as if this is not his "natural" mode of approach to a learning task. This is not true of all children, but seems to be characteristic among those labeled disadvantaged. Why some children evince such resistance to verbalizing in effective ways in nonsocial problem situations remains a mystery. Some of these children appear highly fluent in conversation. Their verbal production, however, seems to have little or no functional value when they are privately confronted with a problem. In short, their language does not seem to serve as a tool of thought.

g. Relationship between learning abilities and intelligence.—Jensen's chief research effort involves the study of the relationship between performance in a variety of learning tasks and psychometric intelligence. He is especially concerned with the experimental analysis of learning abilities in children called culturally disadvantaged. The basic finding is already well established although in its details, its theoretical interpretation, and its possible implications for instruction and educational policy, it needs much more research and thought.

The basic finding is this: children from a low socioeconomic background who have measured IQ's in the below-average range from 60 to 80 perform in general much better on a variety of associative learning tasks than do middle-class children in the same range of IQ. On the other hand, low SES children who are above average in IQ do not show learning performance that is significantly different from the performance of middle-class children of the same IQ. This finding holds in Caucasian, Negro, and Mexican-American groups.

Status of Deprived Adults

In light of the information gleaned from the childhood data, the following generalizations may be made about adult victims of early deprivation: the ability to learn as indexed by standard tests of intelligence is lower for both deprived children and deprived adults and, as age increases, the disparity between deprived and nondeprived individuals tends to increase; deprivation is associated with a lower level of educational achievement; and deprivation is associated with a way of life (or set of behavioral dispositions) including a limited view of alternative approaches to problem-solving, an inadequate social communications system, a tendency towards impulsive rather than reflective behavior, a preference for immediate as opposed to delayed gratification of needs, and a poorly-integrated (i.e., disconnected rather than sequential) utilization of limited modes of dealing with stimuli.

There is some quite specific data on the level of background knowledge possessed by hard-core unemployed adults in the previously cited work of Pallone (1965). Negro (40 percent) and Caucasian (38 percent) males and Negro females (22 percent) in South Bend were studied with several aptitude, educational, and vocational instruments. The typical individual (mean age equals 41.9 years) had completed 7.9 years of formal schooling, was able to comprehend paragraph meaning at a level equivalent to a child with 3.1 years of school, understood word meaning=3.8 years, did arithmetic reasoning=4.4 years, did arithmetic computation=4.0 years, used English language=2.7 years, and spelled at a level equivalent to 3.9 years of school. Overall, his educational age was equivalent to 3.6 years of school although he had completed 7.9 years of formal work. As to vocational aptitudes, as measured by the General Aptitude Test Battery (GATB), where the national population mean is 100, the typical trainee scored 70 in verbal aptitude, 57 in numerical, 69 in spatial, 55 in form perception, 70 in clerical perception, 62 in motor coordination, 71 in finger dexterity, 82 in manual dexterity, and 64 in learning ability. These average scores were, in most cases, a full standard deviation below the population mean, or looking at it another way, below approximately the 17th percentile. In all measures, the Negro male averages were slightly below those for the male Caucasians, while the average Negro female scored generally higher in educational achievement and vocational aptitudes, although lower than all males on three of four intelligence tests.

An adult followup study (Skeels, 1966) of two groups of mentally retarded orphanage children revealed that those who were placed in a special, enriched, institutional environment (and subsequently adopted) showed marked increases in test intelligence and were, as adults, normal and self-supporting, while the others, who remained in the relatively nonstimulating orphanage environment, showed progressive mental retardation and were, as adults, wards or inmates of institutions.

In general, it may be hypothesized that any individual, deprived or otherwise, will find it increasingly difficult to change his way of life as he increases in age. Much more is involved than sheer ability to learn or to profit from experience. Specifically—and careful note should be taken of this point—there is to this author's knowledge no evidence to suggest that age need be taken seriously as a criterion in selecting people for an educational, training, or retraining program, at least up to the usual retirement age. In summarizing his chapter on learning, Birren (1964) said: "The evidence that has been accumulating on both animal and human learning suggests that changes with age in the primary ability to learn are small under most circumstances. When differences do appear, they seem to be more readily attributed to processes of perception, set, attention, motivation, and the physiological state of the organism (including that of disease states) than to a change in the primary capacity to learn. . . . At the present time, there is little evidence to suggest that there is an intrinsic age difference in learning capacity over the employed years; i.e., up to age sixty."

1. *Learning Processes of the Adult Disadvantaged*

Efforts to train the low SES adult to function satisfactorily in society and to become employable and productive, provide some information concerning the learning ability of this subgroup. These training efforts can be divided into two approaches. One is to provide literacy and arithmetic training. The second is to find teaching methods which are effective in training for a given task, and which do not emphasize literacy skills. Both approaches have revealed certain techniques which facilitate the teaching of the disadvantaged adult, and which bear upon the learning processes of these adults. No evidence has been found which indicates that the psychosocially deprived adult is deficient in learning ability. He is primarily undereducated—both formally and informally—in the language and arithmetic skills necessary for successful school and job performance.

2. *Teaching Literacy Skills*

Over 30 years ago, Thorndike et al (1936), reported studies which demonstrated that illiterate and semiliterate adult men of low mental aptitude could learn to read, write, and do arithmetic. In fact, they learned these skills faster than did children of comparable educational level, but of higher intelligence. Likewise, in many instances in World War II and in subsequent military settings, illiterate men achieved fourth or fifth grade literacy skills in only 4 to 16 weeks (Witty, 1966; Marginal Man and Military Service, 1965). These findings are significant for at least two reasons. One is that they suggest that whereas intelligence tests are useful in predicting learning performance which requires the skills sampled by the test, they do not necessarily predict how well one can learn the ancillary skills upon which successful test performance is itself based. Thus, while the men in the literacy training programs scored low on the largely verbal intelligence tests, they were in fact capable of very rapid learning of the reading skills which may have hindered their test performance to begin with.

A second significant aspect of the literacy training programs is that the performance of the participants suggests that their ability to learn was not permanently limited due to their predominantly low SES, restricted formal education, or minority ethnic class membership. There were, however, special techniques and methods used to instruct these men. Similar techniques have more recently been used in training for literacy in Job Corps Centers (Carleton, 1966). Some of these techniques and methods, described below, are indicative of certain requirements for learning necessary with low SES groups.

a. Training in a functional context.—Experience with teaching literacy skills to "marginal" men in the Armed Services and in Job Corps Centers has revealed that teaching is best accomplished using materials directly related to the job the person will be performing. Reading for reading's sake is largely an ineffective ploy. The disadvantaged adult requires a direct application for what he learns, so that the relevance of the learning can be established. In short, the teaching of these skills must be functional (Witty, 1966; Shoemaker, 1967): "The main feature of the functional context method is its advocacy of a topic sequence wherein the *functional significance* of each topic is firmly established for the learner prior to and as a context for the learning of novel and more detailed material relating to the topic. Two requirements govern the choice of the learning context for any topic. First, the context must have significance for the learner, i.e., it must be meaningful to him on the basis of previous learning in the course and ultimately his precourse experience. Second, a context must have functional significance, i.e., it must be directly relevant to the goals of the instruction." (Shoemaker, 1967, p. 1.)

b. Reinforcement principles for disadvantaged adults.—It is important to realize that the reinforcements for which the adult works are different from those for which the child works. This is especially true for disadvantaged adults. Most of these people have had a past history of poor performance in school, and have reduced the anxiety accompanying school attendance by dropping out of school. Thus, the avoidance of school is a positively reinforcing behavior. For this reason it is necessary to provide the many extrinsic reinforcements which occur in the functional context method of training. The act of being able to apply what is learned to job performance represents an immediate payoff for learning, which in turn leads to subsequent employment and change in SES.

In addition to the reinforcements given in terms of successful learning experiences, considerable social reinforcement of the disadvantaged adult is required. For instance, many illiterate or functionally illiterate adults are ashamed of this fact. They must receive encouragement to acknowledge their condition and then to try to change it.

c. Training strategies for disadvantaged adults.—A considerable amount of research is being performed by the Armed Services to develop methods for training men of very low mental aptitude, as measured by the Armed Forces Qualification Test (AFQT). This test score is a composite of scores on four subtests: verbal test, arithmetic reasoning, pattern analysis, and mechanical aptitude, all of which contribute equally to the final score. The test requires a considerable amount of reading skill (r. 60, Madden and Tupes, 1966). The majority of men scoring low on the AFQT come from psychosocial backgrounds typical of what is referred to by the term "disadvantaged" (cf., Goffard, Showel, and Bialek, 1966; Summary Statistics on Project 100,000, 1967). An outline of the results of some of the studies which have investigated different training strategies with these men may provide further insight into the learning processes of the disadvantaged adult.

(1) *Ability grouping.*—In one study (Findlay, Matyas, and Rogge, 1955) it was found that grouping low aptitude men with high aptitude men did not improve performance of the low aptitude men over that of a group composed solely of low aptitude men. However, performance of low and high aptitude men was improved by the use of squad competition and reward. Some educational implications of this study are that grouping low aptitude men together may not hinder their performance, and might facilitate the use of special teaching techniques. However, when grouping low aptitude men, care must be taken to ensure that the groups are not regarded as "failures," for failure may then occur in the manner of a "self-fulfilling prophecy." This study also suggests that social interactions can be used as reinforcements to improve learning in low aptitude men.

(2) *Programed instruction.*—Much emphasis has been given lately to the use of programed materials. Research to date is inconclusive in demonstrating the extent to which aptitude is related to performance on various programs. A recent report (Melching, 1965) indicates that programed instruction may not eliminate differences due to mental aptitude. However, it is probable that the relationship between aptitude and performance on a programed test will vary with the requirements for reading skills in the program. Individualized instruction of a programed nature has been successfully used to teach reading skills to Job Corps trainees (Carleton, 1966) and other groups composed of illiterates (Rocklyn, 1965). These programs rely heavily upon tape recorded instructions and live teachers to supply reinforcements for learning. No studies have been found which compare programed and nonprogramed literacy training.

(3) *Lecture versus individualized instruction.*—In a direct comparison of two methods for teaching combat plotting it was found that individualized instruction featuring simple language, pictorial examples, small-step increments in new information, and immediate knowledge of results produced criterion learning by low aptitude men, whereas a group-platform-lecture format was unsuccessful in producing such learning (Taylor and Fox, 1967).

(4) *Rate of learning versus learning to criterion.*—In several studies (Taylor and Fox, 1967) it was found that, while low aptitude (AFQT) men

were able to learn some simple motor and verbal chaining skills under conditions designed to maximize learning, they required significantly more time than high aptitude men to learn these tasks. However, a considerable number of low aptitude men were able to learn as rapidly as some of the higher aptitude men. It is important to determine what differences exist between the slow and fast learning low aptitude men, particularly from the point of view of SES or other indices of "culturally deprived" backgrounds. This is of particular importance in view of the present concern (Bloom, 1968) that aptitude may be more predictive of rate of learning than the level of learning which is possible. If the rate of learning among low SES men is slower than for medium or high SES men, it should be determined to what extent this represents a deficit in learning ability, as opposed to a retardation due to inadequate prior knowledge or experience of either an informational or attitudinal-motivational nature.

Institutionalization of the Aged: Effects on Behavior (Lieberman)

1. *Effects of Institutionalization*

The effects of institutionalization on the psychological well-being and physical integrity of aged adults has been a topic of humanitarian and literary interest since the late 19th century and a question of scientific inquiry for 30 years. It is commonly believed that most institutions have deleterious effects caused by the "dehumanizing" and "depersonalizing" characteristics of institutional environments. Townsend (1962) succinctly summarizes this general view:

> In the institution people live communally with a minimum of privacy and yet their relationships with each other are slender. Many subsist in a kind of defensive shell of isolation. Their mobility is restricted, and they have little access to a general society. The social experiences are limited, and the staff lead a rather separate existence from them. They are subtly oriented toward a system in which they submit to orderly routine, non-creative occupation, and cannot exercise as much self-determination. They are deprived of intimate family relationships and can rarely find substitutes which seem to be more than a pale imitation of those enjoyed by most people in a general community. The result for the individual seems fairly often to be a gradual process of depersonalization. He has too little opportunity to develop the talents he possesses and they atrophy through disuse. He may become resigned and depressed and may display no interest in the future or in things not immediately personal. He sometimes becomes apathetic, talks little, and lacks initiative. His personal habits and toilet may deteriorate. Occasionally he seems to withdraw into a private world of fantasy.

Such a view has been associated with the contention that institutions for the aged are often "dumping grounds," housing many who need not live there. This view is countervened by Shanas (1961) and others who suggest, that on the basis of survey data, that the majority of institutionalized aged have real needs they are attempting to solve via the institution. Whether alternatives exist to meet these needs is unknown, and the need to find them depends in part on assessing whether in fact, institutionalization has deleterious effects, and if so, to what extent and in what ways.

A representative compilation of studies of the elderly residing in homes for the aged, domiciliaries, and nursing homes, suggests that they share the following characteristics: poor adjustment, depression and unhappiness, intellectual ineffectiveness because of increased rigidity and low energy (but not necessarily intellectual incompetence), negative self-image, feelings of personal insignificance and impotency, and a view of self as "older." They tend to be docile, submissive, show a low range of interest and activities, and they tend to live in the past rather than the future. They are withdrawn and unresponsive in relationship to others. There is some suggestion that they have more anxiety which at times is focused on feelings of death (Tuckman and Lorge, 1952; Coe, 1967; Pan, 1950; Mason, 1954; Lepkowsky, 1954; Laverty, 1950; Eicker, 1959; Dorken, 1951; Davidson and Kruglov, 1952; Lieberman and Lakin, 1963; Pollack, Karp, Kahn, and Goldfarb, 1962; Ames, 1954; Fox, 1950; Fink, 1957; Lakin, 1960; Chalfen, 1956; Schrut, 1958; Swenson, 1961). Other investigators (Camargo and Preston, 1945; Roth, 1955; Whittier and Williams, 1956; Kay, Morris, and Post, 1956; Lieberman, 1961) have reported marked increases in mortality rates for the aged entering mental institutions and homes for the aged.

These studies clearly demonstrate that the aged, residing in a variety of institutional settings, are less psychologically well off and more likely to have shortened life spans than the aged living in the community. The detection of differences between those living in institutions and those living in communities does not of itsef mean that the institution has created the differences. Before this conclusion can be entertained, it must be determined that aged in institutions and aged living in the community are comparable, and differ only in that some live in an institution. Secondly, it must be shown that it is the characteristic of institutional life *per se*, and not other factors associated with becoming institutionalized that induce these deleterious effects.

This portrait, based upon population statistics, becomes somewhat clouded when any particular sample of institutionalized aged is considered. With the introduction of this degree of precision, in contrast to crude population statistics, significant proportions of the elderly residing in institutions are shown not to differ physically or mentally from their community counterparts. Gitlitz (1956), utilizing morbidity, mortality, and psychiatric disorder statistics from a large home for the aged, suggests that the incidence of specific types of morbidity may not differ between the institutionalized aged and those living in communities. In part, these apparent discrepancies between population statistics and studies carried out with samples stem from the underestimation of psychiatric and physical morbidity in community samples, and the relative overestimation in the institutional samples because of better diagnostic techniques. This lends further weight to the probabilities that some of the effects attributed to living in an insitution may be induced by other than institutional factors.

2. *Environmental Change*

A number of investigators have studied the effects of radical environmental changes on the psychological well-being and physical survival of the aged. These studies have involved changes from community living to life in an institution, relocation from one institutional setting to another, and movement from one community setting to another. These studies suggest that it is the conditions associated with moving into an institution that create many of the effects previously attributed to living in an institutional setting. The majority of studies (Aldrich and Mendkoff, 1963; Goldfarb, Siroon, and Turner, 1966; Blenker, 1966; Lieberman, 1961; and Jasnau, 1967) have shown that changing the environment of the elderly sharply increased the death rate. While the studies of Lawton (1967) and Miller and Lieberman (1965) failed to show this effect, other negative effects were observed. In Lawton's study, the relocated group was judged to have declined more frequently on measures of health compared to the control group; in the Miller and Lieberman study, half the *Ss* declined psychologically (occurrences of confusion, memory defects, bizarre behavior) or physically (hospitalization, restrictions of activity, health failures). A recent study (Lieberman, Prock, and Tobin, 1968) has shown that many of the effects (on self-image, interpersonal relationships, mood tone, etc.) ascribed to living in an institution were set in motion by the decision to enter an institution and occurred with maximum intensity prior to actual entrance. Fried (1963), in studying forced relocation due to urban renewal, noted that many suffered serious, depressive reactions subsequent to such relocation. He hypothesized that the greater the prerelocation commitment to a living area, the more likely *Ss* would react with marked grief. These reactions were explained in terms of fragmentation of spatial identity as well as group identity. In a similar vein, Friedsam (1961), studying reactions to disaster, showed that events which markedly changed their living patterns were particularly destructive for the aged, creating profound psychological distress.

Some investigators present data which suggest that more precision is required in understanding which conditions and what kinds of aged will experience such environmental changes as a severe crisis. Dobson and Patterson (1961), Epstein and Simon (1967), and Stotsky (1967) studied elderly mentally ill moved for "therapeutic" purposes to nursing homes, boarding homes, or homes for the aged. Here, relocation (many of these *Ss* had lived in institutions most of their adult lives) did not produce massive death rates and psychological or physical disabilities. Carp's study (1967) of the elderly moving into apartment dwellings showed an increase in satisfaction, adjustment, etc. Goldfarb (1966) and Donahue (1965) suggest that under certain conditions (which are at this juncture mostly unknown) some individuals entering or being relocated from one institution to another experienced positive (ego-enhancing) effects.

Related to this discussion are published results as well as data from current investigations about the characteristics of people who are vulnerable to environmental change and some of the conditions under which such change has deleterious effects. A number of investigators have found that the degree of psychiatric disturbance and cognitive malfunctioning (Aldrich and Mendkoff, 1963; Goldfarb, 1966) is positively associated with risk. In addition, studies investigating personality patterns, depression, etc., have suggested association with risk (Miller and Lieberman, 1965; Aldrich and Mendkoff, 1963). Goldfarb (1966) suggests that cognitive intactness is associated with improvement under relocation. Mental hospital patients who showed little change in relocation may be influenced by a peculiar set, an "environmental insulation" which make them impervious to what is a profund crisis for many aged.

The evidence concerning conditions affecting reactions to change is only beginning to appear in the literature and the complexity of theoretical propositions and technical problems makes this aspect of study presently more tentative. Voluntary or involutary change (Lawton, 1967) and the adequacy of preparation [5] are associated with vulnerability to change. In addition, factors such as the orientation of the individual (Carp, 1967) to the impending change are suggestive. Jasnau (1967) suggests that "massed" relocations without adequate "warning" are destructive. The meaning that institutionalization has for the individual may be important in affecting his reactions. Data gathered on the attitudes of the elderly toward institutional arrangements closely parallel the common societal stereotypes about such institutions. Kleemeier (1960) suggests that older persons exhibit a generalized negative feeling toward all special settings for the aged. Montgomery (1965), studying rural aged, found a consistent desire to remain in the present residence and equated this with highly valued independence. Survey data (Shanas, 1961) yield material on the general fear of the elderly toward moving—loss of independence, prelude to death, rejection from the children. Lieberman and Lakin (1963) found that the aged facing future institutionalization attach symbols of fear, rejection, and dread to the event. Tobin (1968) found them of extreme loss in a group facing institutionalization.

Anticipating institutional living in such emotional terms may have profound effects on the aged. Studies in other areas on the effects of loss are highly suggestive. Research on the sequelae of widowhood shows some of the same patterns as institutionalization: increased mortality, incidence of physical disorder, withdrawal, and depression. A number of investigators have associated psychological loss with the onset of physical illness. Childhood hospitalization research supports the view that loss is a major contributor to the upsetting aspects of institutionalization. Perhaps inquiry based on psychology of loss offers a more powerful framework for the isolation of factors leading to the noxious effects of institutionalization.

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[5] Only anecdotal data are available for the aged. Good empirical data can be found in studies of the hospitalization of children (Prugh, 1953; Vaughan, 1957) which show mitigation of the deleterious effects of hospitalization.

Characteristics of environmental change have also been studied in terms of "overload." The extent that change for the aged is disruptive and destructive—depending upon the relationship between the characteristics of the two environments—is currently being investigated. The larger the discrepancy in old and new situations, the greater the possibility that the aged individual will need to develop adaptational responses, often beyond his capacity. In this vein, the effect of living in an institution can be viewed, not in terms of the quality or specific characteristics of the institution, but in terms of the degree to which the characteristics of the institution force the person to make new adaptive responses and the degree to which they permit adaptive responses from the previous environment to be effective. It is possible that some of the current trends aimed at "de-institutionalizing" institutions, e.g., making them more open to the outside community, less congregant, etc., are effective because they permit more use of prior adaptive responses.

3. *Direct Studies of Institutional Effects*

There is another group of studies bearing on the effects of institutionalization which are not open to the biases created by selection and radical environmental change. These studies have used one of three design strategies: studying the effects of psychological well-being of institutionalized persons as a function of alterations made in the structure of the institution: studying the effects on behavior of the length of time spent in an institution; and comparing the differential effects on individuals of residence in a variety of institutional settings.

a. Alteration in institutional structure.—The view that certain characteristics of institutionalized persons (which were previously thought part of a disease process such as the withdrawal and apathetic behavior of schizophrenics) were associated with life in an institution has in large measure been supported by evidence from studies of institutional change. A large body of descriptive anecdotal material and some controlled studies in mental hospitals, beginning with the classic descriptions of Stanton and Schwartz (1954), suggest that hospital structure has impact upon the inmates and that changes in such structures may be ameliorative. Much of this change has been directed toward therapeutic goals, e.g., the change from custodial to therapeutic care in mental hospitals. Studies specific to the aged are fewer, but agree in general with the broad findings of the field—that alteration in the social-physical world of elderly mental patients has ameliorative effects, and that most changes made are toward "de-institutionalizing" the institution (Greenblatt, York, and Brown, 1955).

Some current works (Gottesman, 1963; Kahana, 1968) are illustrative. Kahana experimented with age segregated and age nonsegregated environments and found that the nonsegregated environment led to an increase in social interaction and emotional responsitivity and showed a trend towards improvement in mental functioning. Gottesman's study also suggested that alterations in the physical or social structure of institutions for aged mental patients can mitigate negative behavior usually associated with the effects of institutionalization.

Despite such positive results, a research strategy based only on alterations in the environment cannot make a significant contribution to delimiting the effects of living in an institutional environment. Alterations in the social structure may produce change in inmates, but do not directly bear on the depriving effects of the institution. The characteristics of the institutionalized mental patient—apathy, withdrawal, etc.—may be a product of the disease which is ameliorated or changed by alterations in the environment and changes in behavior do not demonstrate that it was a particular institutional environment that was directly associated with those maladaptive behaviors. Moreover, the general positive results produced by most therapeutic milieu programs in hospitals for the mentally ill strongly suggest the possibility of a "Hawthorne" effect. These considerations, in addition to the pragmatic problems of making salient and significant alterations in many institutional structures, suggest that this research strategy has limited usefulness in determining whether life in an institution for the elderly has noxious effects and the characteristics of the environment that can be associated with such effects.

b. Length of institutionalization.—Several investigators have attempted to isolate the effects of living in an institution by measuring behavior of subjects who live in a particular institution for varying amounts of time. Although potentially offering a reasonable method for specifying the noxious effects of institutional living, the yield from this method has been limited. Townsend (1962) found that those residing less than a year in an institution did not differ from residents of 10 years or more. Webb (1959), on the other hand, suggested that those who had lived in insitutions for long periods of time indicated more concern about reentry into the community and less willingness to attempt it. Ongoing work (Effects of Relocation on Long-Term Geriatric Patients[6]) suggests a relationship between emotional responsitivity and length of residence in institutions. However, most analyses reported in the literature have yielded few positive results. The lack of significant findings may be associated with method difficulties—length of time in an institution is associated with a biased population (discharge or death) and some investigators have not taken this factor into account. Given the relatively homogeneous populations in institutions, the need for sensitive measurement is increased, and most studies have reported results based upon crude data that may not discriminate existing differences.

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[6] State of Illinois, Department of Mental Health Project No. 17-328. Morton A. Lieberman and Sheldon S. Tobin, Coprincipal investigators, Darrell Slover, project director.

c. Comparative analysis.—Studies comparing a variety of institutions offer the best potential for isolating specific effects on the psychology of the aged and for determining the environmental characteristics associated with these effects. Overall, the promise of this approach has not as yet been fulfilled. Townsend (1962) compared various types of institutions from a sample of 173 institutions. Utilizing scales based on adequacy ratings of physical facilities, staffing and services, mobility, freedom in daily life and social provisions, he suggested that differences were evident between "good" and. "bad" institutions in such elements as occupations, the number of visitors received, and the amount of mobility. Townsend's evidence unfortunately does not provide information associating the quality of institutions and psychological characteristics attributed to institutional living, nor is it possible to determine from this study how much these institutions differed in populations served. Dobson and Patterson (1961) compared geriatric mental patients living in nursing homes to patients living in state mental hospitals. Their analysis of behavioral ratings suggested no difference between the two groups. In a similar study, Epstein and Simon (1967) compared nursing homes and state hospital patients and found results comparable to those of Dobson and Patterson. Coe (1962), using a model for assessing institutional structure, found some association between the degree of depersonalization of environment and the effects of self-imagery. Bennett, Nahemow, and Zubin (1964), using Coffman's framework (1961), suggested that the more total the institution (based on such items as orientation of activities, scheduling of activities, provisions for dissemination of rules and standards of conduct, provisions for allocation of staff time and observation of the behavior of inmates, types of sanction systems, how personal property is dealt with, decision-making about the use of private property, pattern of recruitment, voluntary-involuntary and residential pattern, congregate versus private) the greater its depersonalizing effects. Schrut (1958) compared 60 subjects, 30 living in "apartment-like" dwellings associated with old-age homes and 30 living in the more central "institutional" home, and found that the subjects living in the apartments (more like their previous living arrangements) showed less anxiety about their health and less fear or preoccupation with death than subjects living in the central facility.

The studies in this area that have produced positive findings (an association between institutional characteristics and effects on persons living in those institutions) have two common characteristics: (1) the different institutions are compared using some theoretical model to distinguish differences in institutions rather than making comparisions based upon types of institution, and (2) the effects on the psychological well-being of the residents are measured by instruments that are apparently more sensitive than the more commonly used rating scale approach.

None of the studies surveyed has met the problem of differences in population found between different institutions of a similar type (for example, Goldfarb's report of extreme ranges in cognitive impairment among homes for the aged). Thus, it is unknown how much of the positive results reported can be attributed to population differences. To make the method of comparative analysis effective, the population characteristics of institutions must be taken into account.

An overview of the findings available to date suggests the tentative conclusion that despite the appearance of what seem to be "good" and "bad" institutions, those characteristics that are instrumental in influencing the behavior of the individuals residing in the institutons are shared by all institutions, and these common characteristics may be more salient negative influences than the characteristics that differentiate institutions catering to children. Such studies (Vernon, Foley, Sipowicz, and Schulman, 1965) have, by and large, failed to produce clearcut relationships between the degree and kind of maladaptive reactions of children and the characteristics of the institutions.

PART III: SUMMARY OF RESEARCH PROBLEMS AND NEEDS

In the perspective of the current state of knowledge in the field and the theoretical issues that now appear to be most significant, a number of research needs and topics are of particular scientific importance. These are areas of inquiry in which basic research is most likely to advance present knowledge and theory and to provide a sound basis for field demonstrations and action research. This enumeration of research needs is summarized from the recommendations of the panel of contributors to the Task Force and from other relevant literature sources.

Research Strategies for Improving the Quality of Research on Psychosocial Deprivation

1. *Need for More Specific and Precise Definition of Disadvantaged Populations*

Research has indicated that such terms as "culturally deprived" or "disadvantaged" are useful only in the most general discussions of the social problems intended as the referent of these terms. Much confounding of information occurs when low SES, ethnic minority groups, the under educated, and the mentally retarded are indiscriminately included under the rubric of "disadvantaged" and studied as a homogeneous group. To properly understand the influences of social class variables, ethnic variables, etc., upon learning ability, precise descriptions for such variables must be developed and utilized to define the population of interest.

2. *Utilization of Social Contexts as Research Settings*

To increase understanding of psychosocial deprivation, a major research impetus with deprived children should involve more research in school settings. The unit of study is the teacher-child environment, where the explicit purpose is to increase the child's level of knowledge, to impart skills in thinking and communicating, and to acquire work habits for mastering the various requirements. The classroom should be increasingly used as the center for research with the teacher as an active participant. Less attention should be spent on what is going on and more on manipulating classroom environments where the procedures used by the teacher, how she organizes the material, and her teaching strategies are maximally predefined with the aim of creating particular impacts.

Besides more extensive research in the classroom setting, it is important to gain an understanding of a child's behavior and experiences outside the classroom. In the past, two distinct kinds of research were reported: (1) testing the school room in experiments and laboratory settings, and (2) research using participant observers outside the classroom who establish close rapport with the youth involved. Those who knew the children best did not know how they performed in school and the teachers had only the faintest notion of the children's out-of-school experiences. By utilizing techniques for studying the child in the school environment and during his nonschool hours, a more complete picture of the child's total environment would be provided.

3. *Support of Longitudinal Studies*

There is a need for longitudinal studies—particularly those designed to assess the longer range effects of intervention programs. The usual format of short-term intervention followed by immediate posttesting should not prevail at the expense of more long-term studies. Difficult as the latter are, it is necessary to devise efficient, albeit expensive, procedures by which to assess longer term effects of intervention.

4. *Utilization of Social Intervention as Experiments*

One research model that is proposed is the use of intervention as an experimental model. Assessment of the status of a child's functioning in the context of relevant cultural variables is the first step in this model. This is followed by *intervention programs,* with subsequent postintervention assessments which take into account cultural implications as the final phase. The logic of this approach rests primarily on its efficiency. Instead of programs of descriptive correlational research, the plea is for experimental studies where the descriptive data become part of the pretest data collection. Postintervention assessment provides both the opportunity for evaluating the consequences of intervention on a broad scale and data useful for future program planning. This view of the experimental potential in social intervention and some methodological implications of such an approach is elaborated by Campbell (Donald T. Campbell, Reforms as Experiments, unpublished paper).

Basic Research in the Development of and Change in Cognitive Abilities

1. *Cognitive Operations*

a. Symbolic behavior.—A major research effort should be devoted to studies of the *acquisition and utilization of symbolic behavior.* Work with preschool and kindergarten children has revealed that lower class Negro children have more difficulty than middle-class children in dealing with representations. Given objects to categorize, these children were less successful in organizing two-dimensional representations in contrast to three dimensional stimuli (Sigel, Anderson, and Shapiro, 1966; Sigel and McBane, 1957). Other studies, such as those in language usage and conceptualization, reveal deficits in abstract thinking and conceptualization. Competencies in these areas are, theoretically at least, crucial precursors to symbol usage. One needed area of study is the creation of intervention techniques which will facilitate the acquisition of *symbolic competence.*

b. Problem-solving strategies.—There is a need for research on problem-solving behaviors which involves the acquisitions of skills and techniques which integrate known information, organize this information vis-a-vis the existent problems, and seek out novel situations. Relevant areas of investigation involve such factors as *flexibility, information processing, feelings of competence,* and a *sense of mastery of the environment.* Skills in problem solving also require the capacity to be task oriented, to identify and to attend to relevant cues, to discriminate between relevant and irrelevant stimuli, and to be reflective.

c. Stringent test of the Gagne cumulative learning model of cognitive development.—Since this is the explicit model underlying most attempts to improve the cognitive development of disadvantaged children, and since Gagne has already worked out explicit examples of the subskills on which children would need to be trained for attainment of conversation performance on Piaget-type tests, this seems the logical place to begin an experimental program. The Gagne model has not yet been put to any experimental test with disadvantaged children.

d. Haptic-visual transfer.—This phenomenon should especially be studied in disadvantaged children, for two main reasons: (1) it is probably a good index of the development of a cognitive mediating process, and (2) there are recent indications that certain aspects of deprivation, particularly nutritional factors, adversely affect the development of haptic-visual transfer (Cravioto, De Licardie, and Birch, 1966).

e. The relationship of nutrition and eating habits to cognitive development.—Linus Pauling and Bernard Rimland hold some rather radical views on the importance of nutrition—particularly proteins and vitamins—on mental development, and, in accord with Roger Williams, emphasize the great range of individual differences in dietary requirements. Minimum daily requirements for optimal cerebral development and functioning may be quite different among various racial groups as well as among individuals. These biological factors in cognitive development are probably important and should be studied carefully. This approach has been eclipsed by the great emphasis on socio-cultural factors involving the child's interactions with family and peers.

f. Compensatory development across sense modalities.—Deficiencies of knowledge exist with respect to changes in information processing or, more specifically, with respect to compensatory developments across sense modalites affecting the whole range of cognitive functioning from basic sensory mechanisms to complex processes of psycholinguistic and logical operations. Also, little is known about the ecological significance and utility of the different forms of sensory-perceptual information (this holds for the field in general, as well as for that portion concerned with the aging process). The possibility of sensory compensations needs to be explored. To what extent, for instance, can a person with poor vision compensate for this deficiency by relying on other senses? Is such a compensation possible in general, and to what extent is it possible for aged persons? To what extent and how soon do sensory deficiencies affect cognitive linguistic functions in general and what compensatory action can be taken by the aged person? Is the well-documented decline in intellectual and cognitive functions due to aging dependent on sensory-perceptual deficiencies or does it represent an independent, central deterioration process? Does such cognitive deterioration interact with intervening socio-cultural deprivation?

The discussion of central, biological deficits raises the questions of the boundaries between pathological and normal aging. Both the study and the treatment of normal aged persons as well as of clinical patients with brain defects, due to trauma, hemorrhages, heart conditions, etc., will profit from such exploration. This exploration also supplements those mentioned above in that it focuses upon central deficits that are, to varying degrees, independent of peripheral deterioration and declining visual and auditory functioning.

g. Basic learning processes in disadvantaged adults.—A host of studies are required to evaluate the learning abilities of disadvantaged adults, with environmental and psychosocial characteristics well defined and subject to experimental control. These studies should include the basic variables of acquisition, retention, retrieval, and utilization of information with tasks of defined complexity. Because certain factors accompanying low SES, such as poor diet, may affect basic sensory processes, consideration should be given to the role of basic sensory-perceptual factors in the learning processes of the impoverished adult.

One of the most important aspects of the learning process is reinforcement. We really know very little about the reinforcements for learning that exist in the experiences of the general adult population. Such knowledge is even more limited with resepct to various subpopulations of adults (e.g., adult women; adult disadvantaged). Considerable attention should be given to the determination of classes of reinforcers for adults from various backgrounds.

h. Assessing intellectual achievement in disadvantaged adults.—Intelligence, mental aptitude, and scholarly achievement tests are not valid instruments for evaluating the learning ability of the disadvantaged adult. They do not sample representatively the life experiences of these people. This problem has been identified with regard to the general adult population by Demming and Pressey (1966). They sought to construct tests with content and tasks more natural or "indigenous" to adult life to see whether some reformulations of concepts regarding adult abilities might be suggested. Their tests contained items of "practical" concern, such as how to use the yellow pages of a telephone book. Their results suggest that such tests more accurately evalaute the learning ability of adult populations than do the customary "school-based" intelligence tests. Such an approach might be taken with well-defined subpopulations of disadvantaged adults. These tests would help to separate the mentally retarded from the undereducated within the subpopulation.

i. Training technologies for disadvantaged adults.—Training studies offer opportunities to discover how well the disadvantaged adult learns under real-life situations and what special materials and training strategies are most appropriate for a given individual. They also offer the opportunity for following the individual into the job situation to find out how well he retains what he learns in his formal training, and how well he can utilize his training in the "real" world. It is frequently assumed that by providing a man with a desirable basic skill his job performance will improve. Experience in the military services has indicated that this assumption may be false (Marginal Man and Military Service, 1965). Many of the military literacy training programs were successful in training literacy skills at the fourth and fifth grade levels. However, studies of the job performance of the graduates of these programs have consistenty shown that they do no better on the job than men of comparable pretraining literacy skills who did not attend the special literacy training units. Nor do they do as well as those who enter the service as literates. This may reflect the fact that the literacy training was too superficial. At any rate, research needs to be performed to determine how well the disadvantaged adult can utilize what he learns in the training class on the job, as well as whether changes occur in motivation in adults that may influence the use of recently learned or established skills.

2. *Developmental Processes*

a. Investigation of the function of sequence and timing in early learning in advantaged and disadvantaged populations.—Among the salient dimensions of developmental learning which currently enjoy the staus of important foci for investigation are: (1) the comparative importance of early as against later stimulation, (2) the existence of critical periods for and sequential stages of cognitive development, (3) the cumulative role of stimulation in the development of abilities, and (4) the differentiation of abilities in content, form, and level according to the cumulative differentiation of stimulation.

The significance of the first question lies less in the early planting of discrete information than in the potential and power which initial forms of learning may hold over all attempts to learn and solve problems in subsequent periods of development. It has been widely hypothesized that the early period of life lays the foundation for learning, and a significant body of evidence has been developed relating to the concentration of dysjunctive and ineffective forms of perceptual-cognitive and social stimulation in socially disadvantaged groups (Hess and Shipman, 1965; John and Goldstein, 1964) and institutionalized young children (e.g., Casler, 1961; Provence, 1962; Yarrow, 1961). If the infant and preschool periods are indeed foundation periods, then all later development is very much cast in the mold of *re*learning and *compensatory* education. It appears that each child develops, not simply in terms of greater or smaller information and tool gaps, but equally in terms of cognitive modes of learning and sets for types of learning. These modes may be more or less efficient for facilitating learning, for processing symbolic information, and for coping with cognitive adaptivity in an increasingly complex social and technological environment. Cognitive learning sets, on the other hand, dispose a child more or less favorable to the kind of information and problem solving that is culturally valued in the school and other institutions. Moreover, a large number of historical (Anastasi, 1958; Wellman, 1945) and recent (e.g., Gray and Klaus, 1965; Weikart, 1967) endeavors at early compensatory educational intervention repeatedly underscore the difficulty of altering these early foundation deficits or dysfunctional modes. It is at least conceivable, although there is some disconfirming evidence (e.g., Orlansky, 1949; Skeels, 1967), that the failure to acquire certain modes or the acquisition of dysfunctional modes in early life may be irreversible.

b. Investigation of relationship between Level I (associative learning) and Level II (cognitive or conceptual learning) abilities and their implications for school instruction.—One of the key questions that needs to be answered is the origin of cognitive or conceptual learning (Level II) ability. Is it wholly acquired? Or does it depend upon inherited neural mechanisms which mature at a later age than the mechanisms involved in associative learning? Many psychologists and educators have been acting on the assumption that the "higher" cognitive processes are a result of the cumulative effects of learning, particularly of verbal mediation strategies and the like. This assumption must now be questioned.

A number of different research approaches will help to determine the relative roles of developmental and experiential factors in cognitive functioning.

(1) The relationship between various physical growth indices and measures of mental development needs to be studied *within* and *between* various socioeconomic and racial groups. Within Caucasian groups we know that a fairly strong multiple correlation exists between a number of indices of physical maturation and performance on various mental tests. Does the same multiple regression equation predict, say, mental age, in other racial groups to the same degree as in Caucasian groups? In short, are the correlations between various indices of maturation, both physical and mental, the same for different social class and ethnic groups?

(2) What is the normative distribution of various developmental indices in large representative samples of various segments of our population? How much consistency in status on developmental tests is there among various groups?

(3) How well do the rather simple polygenic models that fit the patterns of correlations among blood relations do well for, say, height and fingerprint ridge counts also fit developmental indices? We need methodologically and genetically sophisticated heritability studies of most of the measures we use in developmental research.

(4) We need highly focused and long-range attempts to train specific cognitive abilities in children who are *high* in associative learning ability (Level I) and poor in conceptual ability (Level II). One important factor which has vitiated much of the enrichment and cognitive training research is that no distinction has been made between Level I and Level II and the subject's initial status on Level I. A group of lower class children, all with rather low Stanford-Binet IQ's, is made up of children who stand at all points on the continuum of Level I learning ability. Those who are low in Level I have little potential for any kind of learning—they are like middle-class retarded children. Cognitive training should be focused on children with average or superior associative learning ability and short-term memory. Half of the children called disadvantaged fall into this category. The problem, then, is to see if these children with good associative learning ability can, through intensive, highly focused training, acquire Level II abilities—that is, those abstract cognitive modes of processing information that characterize "g."

c. Testing Piagetian theory.—Another major research effort must be undertaken: the systematic testing of Piagetian theory. The justification rests on the following: Piaget provides a *longitudinal* view of the sequence of cognitive growth. His is the only theory which explicates in varying degrees of detail the course of cognitive growth. Setting up intervention procedures for deprived children may provide valuable answers to the relevance of the theory. More important, however, for the human condition, intervention techniques may demonstrate useful means whereby the crucial deficits of the deprived children can be eliminated.

d. Conceptualization of the aging process.—Major attention needs to be directed toward the conceptualization of the aging process. At the present time hardly any noteworthy psychological theory has been proposed which attempts to explain and to integrate various aspects of the aging processes. In Riegel's opinion (Riegel, 1966), such a psychological theory would have to emphasize environmental and biological contingencies in order to attain an explanatory rather than a descriptive status. In relying on these extraneous factors, such a theory has to incorporate a great many more findings than hitherto utilized and needs also to be more integrative in respect to the multitude of specific psychological factors previously observed and recorded.

Basic Research on Language and Language Development

1. *Studies in Linguistic Behavior of Children*

This is reason to believe that much of our information about the linguistic behavior and verbal skills of lower class ethnic children is misleading. A great deal of testing of children's verbal ability is taking place in a school situation itself, and therefore, registers the child's reaction to the social contacts primarily and only secondarily to his actual verbal skills. Until psycholinguistic tests in school situations are controlled by comparable tests in environments more favorable to children in the ghetto, they will not give fundamental data needed on the underlying abilities of the children concerned. One of the most important findings in the New York City work of Loban is the difference between school performance and the linguistic behavior of isolated boys and those who were full peer group members. There has been no research which takes the essential step combining both methods; that is, studying the group inside and outside of the school.

2. *Monitoring Oral Reading*

There is also need for an actual monitoring of oral reading by a constant observer. Such work needs to proceed on the basis of at least a year of exploratory work, analysis and preliminary reports, and the identification of the crucial linguistic and psychological variables to be examined. One practical program involved in collecting data in the classroom to compare with field data is the reluctance of teachers to permit observers in the classroom itself. Such observations are critical and may well include some of the following factors: At what point do teachers correct students, the teachers' reactions to correction, the time spent by each student in learning to read, the time spent in discipline, the relative degree of attention shown toward subject matter, student interaction observed during class, relation of the teacher's speech to that of the students, and the students who are not being directly engaged in conversation or recitation by the teacher.

3. *Comparative Studies of the Verbal Associative Network*

There appears to be differences in the types of word associations found in children from different socioeconomic backgrounds; the chief difference is hierarchical-conceptual versus functional-relational types of associations. The individual's verbal cognitive structure may be explored through this channel. The most powerful techniques are those developed by the Russians, using autonomic responses conditioned to verbal stimuli.

4. *Language Intervention: Nonstandard English*

There is considerable controversy in the area of language intervention programs. For example, does one intervene in the language area to teach children standard English (Bereiter and Engleman, 1966), or does one employ the child's dialect as a point of departure. These are empirical questions and should be viewed as such. The aim to be sure is to enable the child to handle standard English in the most effective way. The progress that has been made in the study of nonstandard Negro speech can also be made in Puerto Rican, Mexican-American, and Indian groups of this country. One of the most urgent subjects for research and one of the most difficult is syntactic complexity. While children can understand, for the most part, the language of the teacher, there may very well be some misunderstanding of the basic syntax or at least a failure in communication because of the speed or complexity of the linguistic and syntactic structure. Measures of syntactic complexity which proceed beyond simple indications of sentence and clause, etc., are badly needed. For example, it is important to know the effects of understanding more complex constructions which children themselves do not normally use, i.e., nominalizations, self-imbeddings, left-hand imbedding, and the like. It is important that research in this area be planned in terms of the advice of competent linguists.

Basic Mechanisms of Exchange Between the Environment and Individual Behavior

1. *Analysis of the Expected (Natural) Environment*

We need research which details the "average, expectable" environment in quantitative terms in order to supplement the intuitive and descriptive standards which we now employ. This needs to be done with due regard to the kind of relativism of which Kagan (1967) wrote. The work of Barker and Wright (1955) and of Haggard (1964) illustrates some possible approaches but does not yet provide the normative data needed.

2. *The Effects of Deprivation on Behavior*

We need careful classification and examination of the types of deprivation which are related to behavior and behavior change. This need is particularly marked in the areas generally labeled "social" and "cultural" deprivation. This can best be provided by research which carefully examines specific subphenomena (e.g., language deficit in comparison with the average first-grade child) within the broad class of cultural deprivation.

3. *Intervention*

a. Rearing disadvantaged children from birth in an enriched environment.—This is an obvious necessity. The closest approximation to such an experiment is being carried out by Dr. Rick Heber, University of Wisconsin. Such work should include a battery of developmental tests, administered both to experimental and control groups. The ultimate criterion will be school performance.

b. To build enabling self-concepts.—Another problem area for research intervention is the development of a concept of self that is enabling for problem solving rather than disabling. Intervention stategies can and should be developed which would provide tests of this relationship. Can intervention in problem solving be intertwined with affective features, namely positive feelings regarding one's competence? This type of research is sorely needed.

4. *Adults and the Institutional Environment*

a. Characteristics of adults.—Further studies that focus on characteristics of the individuals associated with adaptation-maladaptation to institutional life would provide useful and needed data. If it is assumed that there are few alternatives open to the majority of the aged in institutions and that the potential for structural change in so complex a social system as an institution is restricted, then the most powerful investigative, as well as practical, arrangement possible is to match individuals to particular institutional environments. Current evidence suggests that (1) there are large individual differences in the capacity to adapt and perhaps even be enhanced by institutional settings, and (2) that a significant proportion of the aged are clearly mismatched with respect to institutional settings and suffer serious malfunctioning and sometimes death.

b. The effects of environmental change.—The findings of studies investigating institutionalization in terms of environmental change are encouraging. Further development of theory and empirical data illuminating disruptions and psychological loss among the aged is suggested. Although there are anecdotal descriptions of programs preparing aged individuals for institutionalization, the lack of empirical studies comparable to studies of childhood hospitalization (Prugh, 1953; Vaughan, 1957) is striking.

c. Characteristics of the institution.—Comparative analysis of institutions offers the greatest likelihood of determining the specific institutional characteristics responsible for hindering or enhancing the psychological well-being of the aged who enter institutions. The lack of an appreciable contribution from current studies is the result of methodological difficulties that are potentially resolvable. Longitudinal (or followup) studies which would identify and assess populations prior to their entering a selected cross-section of institutions for the aged would allow more precise determination of the amount and kind of influences institutions have on psychological well-being. Some situations lend themselves more readily to such an approach; for example, some institutions have lists of individuals awaiting admission, which allows for the possibility of waiting-list samples. Where institutions have no waiting lists, it is technically feasible to identify subpopulations who tend to congregate in specific institutions (for example, Veteran's Administration domiciliaries). These methods could cope in part with the base rate problem. Otherwise, such studies would be economically unfeasible. Such comparative analyses must be based on an articulated framework for viewing institutional environments. They must use a similar set of measures to study institutional environments and institutional effects on psychological well-being. Although such a research program is complex, it is also feasible. Also it may represent the single most fruitful approach for providing definite information about the effects of institutional environments responsible for such effects.

PART IV: PERSPECTIVES ON RESEARCH NEEDS

To the extent that deprivation is imposed upon the individual by the environmental context at some level of personal, institutional, or governmental decision, deprivation can be seen as an expression of policy and priority. In the sense that environmental conditions are subject to manipulation, the contemporary state of disadvantaged populations within the society is a result of deliberate decisions of neglect. A central principle in the study of the effects of deprivation, then, is that they are functionally related to the cultural, social, political, and economic surround.

A program of basic research on the interaction of deprivation and individual behavior would necessarily subsume studies of the environment and its relation to development. This orientation would, perhaps, include more sophisticated investigations of the process of socialization, including the procedures and influences which orient the child toward major institutions of the society and equip him for interaction with them. The preparation of a child for life in a complex society and the organization of the social structures which make adult life productive and provides adequately for adult socialization into retirement and other disengaging roles is thus an appropriate arena for basic research in human development.

While much is known in general terms about the characteristics of environments that are most supportive for man's development, it is also apparent that with evolving knowledge we define these environments better in each succeeding scientific advance. However, most of the investigators who have contributed to our present knowledge about the effects of deprivation on development and aging have worked in relative isolation. As creative and productive investigators, they have developed their research with a minimum participation of the institutions of the society or with the cooperation of only a single institution. This gives rise to an important perspective on future research in the area of behavior and environment.

If research on larger numbers of subjects in different socioeconomic classes and in different geographic areas to be pursued, investigators will need new kinds of support from institutions. For example, public schools have been relatively isolated within the one dimension of the educational processes. However, a variety of cultural and health conditions influence child growth and mental development. Research workers within public school systems, as a matter of policy, are often precluded from investigating these related, important variables. Thus they must attend to smaller and less important within-institution variances. In a similar way, health institutions and medical systems remain isolated from variables operating within school systems. Public policy should be encouraged to develop to the point where investigators can relate findings within one institution to variables characteristically under the control of another institution in the society. Also, ways must be sought to enable the university-based investigator, characteristically interested in the problems of development and aging, to obtain data from our public institutions such as schools, hospitals, industries, social security systems, and like institution. Much of the advance in our understanding of the environment that optimizes man's well-being will come from interrelating variables that characteristically fall within the isolated domains of social institutions.

Two of the dominant features of contemporary programs of action and research with disadvantaged populations are the degree to which they reflect the concerns of the society—that is, political, social, and economic conflicts and inequalities—and the extent to which they are based on values which presumably reflect some ultimate social justice. These programs are engaging the interests and energy of many behavioral scientists in ways that are related to their own basic research and theoretical talents, to the political forces of the nation, and to the expressed values of a democratic society. This is a comparatively new arena for the scientist interested in human development. It raises many questions about the role of the scientist in the study of socially relevant aspects of human behavior and the extent to which he is prepared to offer and relate his work to the solving of social problems. It also raises related questions about (1) the scientific usefulness of research-action programs, (2) the utilization of social intervention as experiments in behavior modification, and (3) the adequacy of our university-based training programs.

Another currently mentioned need is for individuals to be followed through time. Many of the variables thought to be important in the development and aging of man are not manipulated, for moral and ethical reasons, in experiments on the study of man. These variables have to be studied in their natural habitat as natural experiments over time. Thus, the longitudinal experiment in man is the closest approximation to manipulated laboratory investigations. Since such investigations are commonly beyond the sources of one or two investigators, institutions should be encouraged to develop their records longitudinally, stored in such a way that future investigators can have access to their data. This is particularly necessary in the study of late life outcomes of early life events. Middle age and late life outcomes of early life social and psychological deprivation or nutritional states require that a span of years be investigated beyond that which the investigator himself can encompass. Institutions such as schools, churches, and the Defense Department should be encouraged to gather standard information on each individual going through their institutions. Much valuable information has already been gathered from data on draftees into the military service. These data show large regional differences for rejection for educational, psychological, and medical reasons. These data are only at the beginning stage, since data on social class and early life history variables have not been well documented.

PART V: RECOMMENDATIONS FOR RESEARCH PRIORITIES

Perhaps the most urgent need in the study of the effects of psychosocial deprivation is to analyze and identify the elements and patterns of environmental input into the complex interaction between the individual and his stimulus surround. The study of deprivation is necessarily a study of the individual in a social system and little progress of a basic nature can be made until the interacting elements of the environment and response properties of the individual are more adequately specified and isolated for study. The mechanisms of exchange between environment and individual and the social and other mediating influences thus represent points of study which may produce considerable gain in evidence and theory.

Priority might be given to encourage efforts at developing a more refined social-developmental psychology of the human lifespan. This is necessary in order to establish norms against which deviancy may be judged as to whether it is psychopathology, aggressive behavior, or educational attainment. These efforts should be encouraged to extend considerably beyond the usual population studies, that is up to age 22, the usual school leaving age for more favored members of society. The environment of the young adult, the middle-aged adult and the older adult must be characterized in more detail and in such a way that it can be incorporated into a psychological theory of human development. Theoretical formulations would replace the more commonsense notion of the nature of man which underlies our legal procedures of our patterns of institutionalization.

The larger institutions in our society such as the schools, hospitals, and industries, must be encouraged to establish departments of institutional research which will maintain records on individuals passing through their institutions. Such data can be used both in terms of outcomes as well as procursors for later life changes of events. Institutional barriers to investigators' research must be reduced in order to increase opportunities for relating social class differences to health services and outcomes for development of productive maturity and aging. In particular, psychological functioning in the adult years is significantly related to health status, which in turn, appears to vary with economic level. Cause and effect relationships must be established here in order to improve the quality of life for adults.

Relatively few investigations have been undertaken on adult learning. In a changing technological society such as ours, the antiquation of workers' skills is rapid. Substantial future investments will likely be made in retraining the 30-, 40-, and 50-year-old individual for job replacement in a changing industrial pattern. At present, very little is known about the basic learning skills and the variables such as motivation, perception, and interference effects of learning in older adults.

The demanding social problems of our contemporary society focus attention on our past lack of support for basic behavioral and social research. At the present time we have immediate policy formulations on an inadequate knowledge base. This indicates that a substantial priority relative to a technological and broadly biological field must be given to behavioral social research. It should not be expected that this research would necessarily lead immediately to application, but rather it will form a background of basic research. At the same time, the support of action-research concurrently with support for behavioral and social science basic research on the processes of human development and aging should be encouraged. This will enable future generations to bridge more rapidly the gap between theory, basic research and application for man's well-being. Further support of technological developments in society without concurrent and extensive expansion of behavioral research may further widen the gap between the well-being of the individual and the society.

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Chapter III

SOCIALIZATION AND SOCIAL STRUCTURE

Bruce Eckland and Donald P. Kent

Papers Contributed by

Richard A. Cloward	Needed Research on Welfare Agencies.
Albert Cohen	The Institutions of Juvenile Justice.
J. David Colfax	Community Structure, Urban Education, and Psychosocial Deprivation.
Ronald Corwin	Bureaucratic Deprivation: Schools and School Boards.
Fred Cottrell	Political Deprivation and the Aged: The State of the Art.
Glen H. Elder	Age Groups, Status Transitions, and Socialization.
Paul B. Foreman	Certain Substantive Organizational and Situational Interests in Public-Supported Research for Policy: An Operations Research Orientation.
Juanita M. Kreps	The Impact of Technology on the Aged.
Robert A. Scott	The Socialization of the Stigmatized into Disabling Roles.
Silvia Sherwood	Deprivation and Status Inconsistency in Later Maturity.
Arthur Shostak	Educational and Occupational Opportunities and the Correspondence with Race and Poverty: Accent on the Unusual.
Marvin Sussman	The Nature of Dependency Among the Disabled.

Chapter III

SOCIALIZATION AND SOCIAL STRUCTURE

PART I: INTRODUCTION

A sociological approach to psychosocial deprivation cannot help but suggest structural causes, consequences, and solutions. Each individual is born into and reared in an ongoing system with established social institutions that largely govern the distribution and allocation of power, privilege, and wealth. Just as geographic terrain will extend itself into the future, so too, do social institutions, social structures, and ways of behavior have a continuity and an influence which endures beyond the moment of contact and indeed beyond the life of an individual. There are inter-generational continuities. The influence of social institutions includes both the manner in which certain individuals, such as the blind or mentally retarded, may be relegated to an inferior status as well as the placement of an entire group of individuals, such as the Negro, into subordinate positions.

Social institutions are directly related to the control or maintenance of established patterns of behavior, and in the restoration or restructuring of social relationships among competing groups. Consequently, every major social institution is directly involved in those activities or events which "deprive" certain individuals or otherwise place them in subordinate and dependent relationships.

Dependency itself is a phenomenon socially defined and structured. There are no absolute criteria either for the particular distribution of superordinate and subordinate positions in society or for deciding who belongs on either side of the relationship. However, we do know, among other things, that *the dynamics of dependency, whether it involves the physically or culturally deprived, are related to control, i.e., the superordinate element frequently benefits by keeping another element dependent.* Such a relationship represents one way of maintaining order and the status quo. Undoubtedly, many of the problems coincident to any consideration of the nature of deprivation come from rationalizations that have developed to stabilize and legitimize existing social relationships. Altering the dependent relationship introduces the factor of competition and may, as well, change the "definition of the situation."

In the past, there has been a tendency to focus primarily on the nature of the role of the subordinate; problems tended to be phrased in terms connoting the inherent inferiority of the dependents or their culture. However, an examination only of disadvantaged persons—the poor, the aged, the Negro, the mentally retarded—represents an incomplete and sometimes misleading picture. The social context within which transactions between the subordinate and superordinate elements occur must also be considered. Dependency

186

sometimes is fostered by the superordinate element to preserve a superior status; sometimes it is a direct result of conditions built into parts of the social system, such as a welfare agency, hospital, or family system.

The social aspects of deprivation may be seen by looking at the physically handicapped. Disability is not only a physical fact but also a *social* fact. Lay and professional workers with the handicapped are probably much more involved than the handicapped person himself in carving out a role for the disabled. How this role is constructed, interpreted, and manifested hinges crucially on perceptions and attitudes toward disability of both the impaired and the "normals." Public definitions and meanings given to the impairment, plus client-centered institutional systems' insistence on finding, treating, and controlling the impaired individual contributes to his self-definition of being handicapped and deviant. Similarly, the role of the poor and certain other "minority groups" is structured not only by their specific economic and cultural deficiencies but also by the attitudes of others, including the staff of those social agencies set up to help them.

The point at issue centers about the fact that any social system in its operation inevitably advantages some and disadvantages others. Each society, in a way, gets the "problem" it deserves. Deprivation results not from personal characteristics alone (nor from personal characteristics at all in some instances) but from the way these personal characteristics are defined or from the functioning of an individual in a social situation. The situational factors may be the deciding ones.

Man is goal oriented and sets up social structures to reach these goals. It often escapes him that these same structures have built-in features that are dysfunctional. For some persons the structures do not facilitate but block the reaching of the goal. The track system in American education which is set up to gear work to students' capacity can, for example, be a serious handicap to the student placed in the wrong track because of his cultural background. The American penchant for tearing down the old to make way for the new also has many positive advantages, most of which, however, escape the older person who finds another basic anchorage destroyed. Our emphasis upon increased technology, with its concomitant greater personal demands, poses problems for many. The list of illustrations could be infinitely extended.

Deprivation can be understood only in terms of social responses to deprivation; that is, only when those who are deprived are defined as such, does the sociological category of deprivation emerge. The state of deprivation is thus created and may be viewed as a form of deviance in the sense that the individual is disadvantaged in social terms because of an imputation of an undesirable difference. *The deprived person is so defined because he deviates from what is considered normal or appropriate.*

A social judgment is made, and this in turn assumes a measuring stick and values. In our society the latter tend to be those of the middle classes. Perhaps one of the most vivid examples of how middle-class values sometimes influence the manner in which we "define the problem" is the dominant attitude toward the absence of fathers in many lower class homes. Delinquency, poor schoolwork, "immorality," and sundry other forms of deviant behavior allegedly stem from the lack of a father. Our evidence, however, actually indicates that there is nothing wrong with having a working mother and no father to rule the house if the care for the child is good. However, the dual assumption that lower class homes do not have fathers and that this is bad, often is reflected in the dispensation of public funds and in setting social policy. Thus, definitions of "desirable behavior" are often colored by a middle-class emphasis upon achievement and individual responsibility; those who differ are labeled immature, dependent, or maladjusted.

Cultural Relativism and Deprivation

Fable has it that there was once a golden age of happiness and then a series of degenerative processes occurred; things went to pot and here we are. Social scientists find no support for this belief. Evidence indicates that most people used to be poor, almost paupers, and then most moved out of the lower class. Nor is it likely that things are getting worse for those still on the bottom in terms of any absolute standard.

But here it must be emphasized that there are no absolutes. Who is considered deprived depends upon the frame of reference of the observer, his value system, and the extent to which he has accurate knowledge of the conditions that prevail. Again, *the identification of the disabled or the poor is a process involving socially structured biases, and vague, permissive stereotypes rather than precise, formalized standards.*

To take a case in point which may help disprove the demoralizing law of increasing misery: of all 2.4 million male workers aged 25 to 64 in 1962 who were born of laborer fathers, only one in eight remained unskilled laborers. The vast majority of unskilled do not remain so generation after generation. An example may be cited on the opposite side. The Federal poverty income line is a convenient definition of deprivation. Using a crude standard of about $1,000 per family dependent per annum, this Nation could thoughtlessly congratulate itself on the steady decline over the past decade in the absolute and proportionate numbers of the poor: down from 30 percent of all families in 1957 to 17 percent in 1965. Such fixed standards can mislead the unwary into forecasting the virtual elimination of poverty. When a society is becoming increasingly affluent and prices are steadily inflating, the search for a single fixed standard is futile. To illustrate, if a family in poverty is defined as any family whose income is less than one-half the median family income (not unreasonable in terms of relative buying power), there would be no decrease evident in the postwar period (19 percent of all families fell below this level in 1947 and 20 percent in 1965).

As another case in point, anthropologists have provided accounts of tribal cultures where the neglect and abandonment of aged persons is quite customary. Such treatment of the helpless was not considered to be disrespectful, and often, in fact, was initiated at the request of the elderly person himself. Abandonment was considered honorable and heroic and was looked upon as an opportunity to inspire respect by one's survivors. Are the elderly in such a society to be considered deprived? Obviously, this depends upon who is doing the defining and his (or his culture's) moral perspective.

The fact that judgments vary with the perspectives of the judges is not to imply that judgments cannot be made. Obviously they should and must be made. And while values vary from society to society, it is almost a contradiction in terms to assume that there can be a society without a value system. It is equally obvious that any social organization is dependent upon the congruence of these values and their acceptance by the members of the society. An understanding of social deprivation demands an understanding of the values of the particular society, the perspectives from which the values have been made, and their relevance to the definition of deprivation.

Discussions such as the above must not be used to provide alibis for ignoring the needs of the disabled and culturally disadvantaged or for grossly misinterpreting what an appropriate response amounts to. From 1946 to 1966, 57 percent of the national budget was spent for military power, and 6 percent for education, health, and other similar functions. Nor should it be assumed that a value system locks a society into a single set of responses. It is all too easy to misinterpret the relationship between the magnitude of needs within various deprived populations and the nature of the contemporary response. To employ the "relativity" argument to reduce currently inadequate programs relating to the poor, the Negro, the mentally retarded, the aged, and others, would be to misuse current social theory and research.

The Fallacy of Over-Generalizations

Much of our past research has emphasized the manner in which a variety of "deprecating" elements tend to hang together, i.e., to become part of the general characterization of a single individual or class of individuals. Some of the "correlates" of poverty are reasonably well known: illegitimacy, alcoholism, broken homes, drug addiction, etc. At times, a single aspect of an individual is picked out which sets him apart from others. Because of this one facet, the person is reduced from an otherwise ordinary person to one who is tainted. It has been learned, for example, that economic deprivation does not necessarily diminish self-confidence (although it may if submission to poor job opportunities becomes a habit), that dropping out of school is not dropping out of society (although it may be if no work can be found or is otherwise unrewarding), and that neither the Negro nor the poor are all alike (except when they are defined that way).

When generalizations are made about the character of an individual from a single or narrow range of traits or, similarly, about the character of an entire population on the basis of one or two known facts, there is apt to be a gross *misjudgment of the problem.* Based on the evidence at hand, it must be concluded that most forms of deprivation cannot be given definite dimensions for placing clean boundaries around clearly discrete groups. Rather, psychosocial deprivation is "social evaluation," existing "in" the judges and, certainly in many cases, in those being judged.

Deprived Populations

Recognizing the difficulties involved in attempting to isolate specific classes of deprived persons, it nevertheless is necessary and convenient to continue to do so. Many of the problems faced by one group, of course, are faced by another. There are, however, important differences among certain deprived populations. For example, the migratory worker of the Southwest, the poor of Appalachia, the poor of the rural South, the pauperized American Indian, the poor among the elderly, and the Negro in the urban ghetto of the North all share a position at the bottom of the class structure. Yet each group differs with respect to the stability of family life, the organization or disorganization of its culture, and the extent to which it can verbalize or cope with deprivation. Moreover, within each of these subcultures, there are [illegible] precise and useful concepts, such as the "hard-core" poor, the "skidders," the "under-skilled," the "demoralized," long-term unemployed, etc. These are just a few of the classificatory tools popularized in the professional literature.

The remainder of this chapter will be devoted to a discussion of the subcultures created within impoverished environments; the socialization of deprived persons into disabling roles; and the incongruities between societal goals and structural opportunities under conditions of rapid technological, urban, and organizational change. The review addresses itself to the dominant features of American society which appear to generate pressures on the psychosocially deprived. In doing so, an attempt will be made to bridge the gap between what is known from the research of the early and middle sixties and the social and political circumstances confronting the Nation today.

PART II: THE CULTURE OF POVERTY

Many studies have been made of lower class culture. Some of these illustrate the strengths of the poor, arising out of their struggles to adapt to a difficult environment, and others document those characteristics of the poor considered to be proof of their inability to lead a middle-class existence even if given a chance. *A more basic and unresolved issue in social science research is whether the poor represent a distinct subculture or whether they simply occupy a position at the bottom in the social stratification system.*

Basic to the concept of a culture of poverty are two points: the poor are not effectively integrated in the major institutions of the larger society but develop local solutions for local problems (the culture of poverty consequently is a means of coping with an objective condition) and the culture tends to perpetuate itself over time, usually from one generation to the next. Other characteristics of the culture of poverty frequently cited by various authors include: low wages, unemployment, and underemployment, residential segregation and discrimination, illiteracy, low level of organization beyond the family, consensual marriage, authoritarianism, and feelings of inferiority and deprivation. However, most if not all, of the behavioral traits on this list are distributed in varying degrees throughout the class structure. What makes the culture of poverty unique is not simply the concentration of these characteristics among the poor, but in addition and perhaps more importantly, the fact that these behavior patterns are rational responses to the condition of deprivation, are part of their life style, and are handed down through generations. The degradation, continuity, and segregation of the poor serve to identify them as a separate culture.

In contrast, there is little or no generational continuity between parent and child in "case" poverty. Simply being at the bottom of the social scale or below the "poverty line" does not in itself qualify one for membership in the culture of poverty. What proportion below the poverty line belongs to the culture of poverty or simply represents intermittent unemployment and situational adaptations is not known.

Three additional and equally basic questions arise in connection with this issue. First, how are the various attributes of poverty interrelated and which ones lend themselves to environmental manipulation? Relevant here, for example, is the new charge that millions of culturally deprived Americans are grossly undernourished, their diet providing less than two-thirds of the prescribed allowances of one or more of nine essential nutrients. What are the social consequences of this condition? There is some evidence that early brain damage is associated with the undernourishment of both mother and child. If poverty does have related states of mental ill-being, then involuntary hunger, rather than willful, adaptive cultures of poverty, may be an important explanatory matter. There are not only lazy poor, but there are poor who are undernourished to the point where they cannot otherwise function as alert and productive human beings.

Second, who are the real victims of institutionalized neglect? If poverty is actually a culture, or to the extent that it is, then the true victims, in the long run, are the children of the poor. By the time deprived children have reached the Head Start program they already have absorbed many of the basic values and attitudes of their culture. Moreover, *simply changing the objective situation of the parent does not guarantee changing the children, although this may be the most fruitful alternative available unless there is a willingness to abolish the parent-child nexus and to institutionalize child-rearing.*

And third, what are the capacities for different deprived groups to move out of the culture of poverty? What, for example, is the "convertibility potential" of Negroes to move out of the lower class? It is doubtful that all of the poor are going to be permanently poor, although some will, and therefore may require a network of special services. On the other hand, it appears that the majority do move out (and some back) during their own lifetime. Moreover, so long as it remains politically incumbent to identify the culturally deprived as those living below a fixed income line, a number of Americans will be found precariously close to the poverty line. Many of the upwardly mobile remain barely above the line, others have lived there for generations, while still others move erratically back and forth across it. The "near poor" is a grossly understudied bloc of Americans who may hold clues to the difficulties of staying out of poverty and the costs of having lived there.

PART III: SOCIALIZATION AND SOCIAL STIGMA

The deprived individual is in an inferior position in the status system of society. However, being labeled poor, disabled, or deviant, does not absolve one from participation in society. Simultaneously, the deprived person is a man of two worlds—the dominant world of the majority and the cultural universe of his minority. The physically and mentally disabled are considered different and are thus expected to behave as such. Likewise, the poor are often considered by others to be poor because they are inferior; their "lot" is seen as justification for laziness or lack of motivation. Ambiguity and ambivalence surround the expectations of normality involving the culturally or physically disabled. Attempts at normality by deprived persons, such as the poor who share the aspirations of the middle class or the blind who want to be "just like everyone else," may appear inappropriate or shocking to the majority because such efforts conflict with established stereotypes. The development of stereotypic response is one aspect of socialization: the process of role learning.

Most adults agree about how children ought to behave, and most also hold similar expectations for the behavior of specific categories of people. In addition, people are evaluated in terms of whether or not their behavior conforms to their particular social identity. However, roles and the self-images of persons who play them are not given at birth; rather, they are acquired through social interaction. The role of stigmatized persons, like normal persons, is acquired through ordinary processes of socialization in which the disabled person is systematically rewarded for behaving in a manner that conforms to the putative social identity reserved for the disabled and systematically sanctioned for behaving in ways that do not conform to it. *It is in this manner that those who possess stigmatizing traits learn how to be disabled. They come to feel, think, and act as deprived persons. From this perspective, cultural, physical and mental disabilities do not by them-*

selves transform persons into different individuals; rather, stigmatized people are socialized to disabling roles.

Thus, one of the main obstacles that most deprived persons encounter in the social world is that they are frequently defined, by themselves and others, as a "disabled person" rather than "a person with a disability." Their disability is a trait which discredits them by spoiling their identity and their respectability. When a person who happens to be physically handicapped or a Negro encounters a "normal" white person, barriers are created between them. These barriers, though entirely symbolic, are often impenetrable. There is a "moving away," a reaction which is induced by the fear that direct contact with a stigmatized person may be contaminating, or that the person will somehow inflict physical or psychic damage on them. The effect of these reactions on those who are stigmatized is profound. It makes the integrity of the disabled person as an acceptable human being problematic and the supposed inferiority of one function is spread to the inferiority of the total person.

For many, the developmental processes by which disabling and other roles are learned begin in early childhood and continue through the entire life cycle. Some special forms of deprivation, on the other hand, occur at specific points in the biological and social timetable. Throughout the life span there are major events and periods of transition associated with distinctive normative expectations that constitute a redefinition of self and a redefinition of appropriate behavior, tasks, and relationships. *There is an appropriate time for dependency on one's family of origin, for education preparatory to adult roles, for marriage and bearing children, and for retirement. In moving though the age structure, one is generally cognizant of being early, on time, or late.* How certain incongruities or discordances in age norms is a major source of psychosocial deprivation is discussed below.

Childbearing, perhaps the most vital of all human tasks, is left largely to fortuitous circumstances in American society. Usually only those children who seriously deviate from their peers or otherwise come to the attention of our clinics, courts, and detention homes receive "expert" advice, and this only after something already has "gone wrong." The inability of parents to prepare their children for the future, i.e., a middle-class future, is no doubt most severe in culturally deprived homes. It is well known, for example, that the migration of adult Negro males out of the South, coupled with a high fertility rate, has produced a relatively large number of children per adult in that region. There are obvious deprivational consequences here for the socialization of Negro children, as large families intensify the economic hardships of the poor. The children also suffer because there are too few caretakers and too few competent adults to serve as models for the young. Negro boys, who are considerably worse off in this respect, see and interact with relatively few employed Negro men, and even these often have only subsistence jobs.

A quite different illustration of child or maternal deprivation is the overprotection of a handicapped child. A common problem encountered in the "rehabilitation" of a disabled child is the tendency for the parent to be overprotective, often at the expense of other children in the home. In the process, the disabled child may never be allowed to assume those responsibilities for which he is, in fact, capable. On the other hand, parents who invoke situations where the child can actually take increasing responsibility commensurate with his ability are sometimes subject to severe criticism from outsiders who may think the parents "expect too much" or are unresponsive to the child's special needs.

Whether a child is disabled or not, parents appear to rely increasingly upon the schools, other adult-directed agencies, and spontaneous groups for the care of their children. With the decline of the family in status and its loss of other functions, perhaps this should be expected. In American society, relatively little attention has been given to viable alternatives to the family. It has become clear that the lock-step procession of most public education is inadequate for the job. Suggestions such as boarding schools for the poor, public overnight summer camps of an educational character, and night and weekend schooling to interest disabled children in remedial and advanced educational work are only beginning to be considered.

Discordance among age norms is a major source of status ambiguity and is particularly common during adolescence and old age. Adolescence has emerged in American society as a socially organized age group with problems centering about the assumption of adult roles in a situation that often mitigates against this.

Distinct changes have taken place during the lifetime of the present-day aged in both the definitions of prestige as they pertain to age roles in our society and in the normative definitions of rights and obligations between aged parents and their children. *While elderly persons generally are aware of the changing role definitions, they nevertheless often define their rights and the duties owed to them by their children as being greater than the definitions the children themselves accept.* The members of the present elderly generation grew up in a period when they were expected to be fully responsible (economically, direct care, visiting, etc.) for their own parents, but now have survived to a period of time when they cannot expect the same kind of behavior from their own children. The current elderly generation can be considered deprived of an ascribed age role toward which, during their youth and early adult lives, they looked forward.

Advanced age may carry its own particular stigma. In a society marked by concerns for consumption, money, work, and youth, old people represent a special brand of deviance. They are largely locked in the talons of a fast-moving age that cannot move fast enough to alleviate problems induced by its growth and change. Their situation presents a stark culmination of many types of dependency—their financial and health problems are often heightened by social isolation. Other social roles tend to revolve around the occupational role; as a consequence, when the elderly become disengaged from the work force their contacts diminish, and for many a sense of "uselessness" may set in.

Thus, each individual moves through a sequence of differing age expectations in life, and is continuously faced with new adjustments in discriminating between past and present norms. The task of socializing age-appropriate behavior involves establishing a structure of rewards which encourages the aged, as well as the child, to "act his age." Little experimentation has been done with alternative roles which adolescents and the aged might be permitted to play.

PART IV: SOCIAL CHANGE AND SOCIAL STRUCTURE

To observe that we live in a period of rapid change is to state the obvious; however, obvious change is no less significant. No one can understand the modern world without taking cognizance of the growth in industry and technology and the correlative utilization of human resources. Concomitant with industrialization has come urbanization with its social influences, and accompanying both has been the widespread growth of a form of social organization which is labeled "bureauracy." All of these have had effects upon those persons who will be labeled "deprived."

This emphasis upon change is not to imply that there is not also continuity. While some major changes may be the result of the random event, institutions and social structures have a way of extending themselves into the future with marked stability and direction.

Industrialization and the Utilization of Human Resources

The question often is raised as to why a society as technologically advanced and affluent as America has so many poor and a culture of poverty. While there are numerous answers, an explanation necessitates an examination of the process by which economic and other social rewards are distributed.

Industrial societies demand a complex division of highly skilled labor. Moreover, entry into most professions and skilled occupations requires many years of formal training. Furthermore, most work is of an independent nature, requiring the coordination and cooperation of persons performing many different kinds of tasks. These conditions, in turn, require the attachment of differential rewards (power, privilege, or wealth) not to people, per se, but to the roles they perform. Different jobs not only differ in their functional value to society but differ in terms of the difficulty of the task and the amount of training required. From the diverse pool of human resources, individuals tend to be selected and sorted on the basis of how well they fit into this system. In the absence of a massive secret police force to direct the recruitment of human labor and to monitor the performance of each worker, industrial societies generally rely upon a system of incentives. Thus, differential rewards are attached to a hierarchical ordering of roles as a basis for the recruitment of human resources and as a basis for insuring that jobs are well performed.

Social stratification in role performance thereby becomes an important element of social differentiation. The predominant values, necessarily it seems, stress a monetary payoff by which more intrinsic goals are achieved. Upward mobility is not only possible but is encouraged since the effectiveness of the system depends, in part, upon the most effective utilization of all talent, irrespective of class origins. Almost as if it were an afterthought, *the principle of meritocracy explains low economic status as the natural result of personal inadequacy or inferiority.*

Yet, there is still the assumption made by many writers that the poor can be and should be eliminated. Some argue that automation could wipe out the need for low-skilled people. Others argue that all culturally deprived youngsters can have the rewarding experience of being above average in one or another area of talent if educational systems began to cultivate enough different talents in the classroom. Still others claim that we can eliminate poverty by engineering jobs to fit the available manpower rather than the other way around. Finally, some suggest that the only solution to the problem is a national economic security plan, such as a negative income tax or guaranteed annual income. Each of these proposals carries considerable merit. However, each also requires further study and experimentation. Since the causes of deprivation are varied, it seems reasonable to suppose that the cures will be equally varied.

Nevertheless, it is clear that discussion about reducing or eliminating poverty really means talking about changing the distribution of income and it is unlikely that a significant change in contemporary patterns of concentration, discrimination, and deprivation will result if the focus continues to be on the growth and development dimensions of these problems. It is all too convenient to attribute the failures of the psychosocially deprived to the failures of the schools, the home, the job market, and so forth, in a nearly infinite regression.

Raising the productive abilities of the poor and the children of the poor is complicated by several factors: automation and technology continue to reduce the number of jobs available to low-skilled people; very little is known about the distribution of talents other than those traditionally tested by the school and even less is known about ways to productively employ those who possess these "new" talents; and virtually nothing is known about either the long or short range consequences of a guaranteed annual income. Finally, even if everyone were to be productively employed, with or without a guaranteed income, it is not known whether this would do anything more than simply pull up the bottom a few notches. The "culture" of poverty may remain untouched. Moreover, the basic shape of the class structure may remain unchanged.

Of course, more limited goals nevertheless might be achieved. There is sufficient evidence, for example, that structural unemployment and underemployment strike a disproportionate number of persons in certain racial and ethnic groups not because they have been sorted out through the schools and found incapable of gainful employment but because they have been trapped in the cycle of poverty and discrimination. Simply being on the bottom brings punishment. But the punishment is all the more severe and unjust when directed at large segments of the population who never have had the opportunity to move out of poverty. Still worse, the children of the poor, whether the adult got there by structured or personal failure, needlessly and unjustly suffer the same consequences. The concomitant cultural deprivation of these children means they often appear under-endowed in skills, education, and health. Within certain limits, the cause may have a genetic origin; for most, however, the causes are rooted in the interactive problems of the family, prejudice, poverty, education, and employment.

So far in this section, the remarks regarding the impact of economic and technological change have not been directed toward any specifically deprived populations, other than the poor. A few brief comments should be made about the special problems involving employment opportunities of women, the aged, and the Negro.

Data on the educational attainment and recruitment of women into the professions tend to indicate that women continue to be largely underrepresented in all major fields and those who do achieve gainful employment usually earn considerably less than their male counterparts in most professions. The picture does not appear to have changed substantially since before World War II, although since the early sixties the rate of enrollment of women in 4-year, degree-granting college programs has been increasing at a rate faster than that for men. It is too soon to judge, however, whether concomitant increases are now beginning to occur at the graduate school level as a prerequisite for entry into a profession, or whether women are using college more heavily today simply as an avenue for achieving middle-class status through marriage.

While employment and related economic problems of the aged are partly due to physical and mental deterioration of a personal nature, the disengagement of the elderly from the labor market is often forced upon them. Structured unemployment or early retirement of the aged usually is the direct result of automation and the advancing technology which eliminates the need for older workers or their skills. Not only are the aged frequently handicapped because they cannot work, but inflation shrinks their savings. Moreover, owing to rising per capita incomes over time, the income of retired persons tends to consistently lag behind those of employed persons and continues to deteriorate relative to others during retirement. The proportion of persons 65 and over in the population has more than doubled since the turn of the century. As their numbers continue to increase, their problems will grow in significance. Even now they comprise one of the largest and most economically deprived segments of our population.

In terms of economic and educational opportunities (the latter, of course, are inseparable from the former) there appears to be one fundamental difference between the lower class Negro and the lower class white. Although it is somewhat a matter of degree, the Negro has not had the same opportunities as whites to move out of poverty. At least for the majority of white Americans, the educational system has acted as a giant sorting apparatus for moving children in or out of the middle class. The machinery, however, has not been fitted for the Negro. He is on the bottom not because he was tested and found to be inferior, but rather because of a century of segregation and discrimination which has isolated him from the main stream of American life. It is important to note in this respect, however, that as the opportunities for the Negro increase and as the Negro middle class expands, some expect this to have a devastating effect on those left behind. Up to now, and certainly for some time yet, the Negro could blame his failure on being Negro. When it can be shown that he can make it, those who do not succeed may, in many respects, feel more deprived than before.

Fiscal Conservatism and Urban Education

The deprivation of large segments of the American population is related, in part, to patterns of residential segregation. Confronted with declining white populations in the central city, apologists for urban educational systems repeatedly cite the poor performance of the central city tax base. A recent examination of 5-year changes in per pupil taxable assessed valuation, for example, found that 10 of the 14 largest cities had experienced declines. Insufficient scholarly attention has been directed to the question of the role of local elites in school financing and the attendant impact upon educational quality. After all, costs do emerge as one of the prime considerations of school board deliberations, and frequently precipitate clashes between it and community leaders on the one hand, and school personnel and parents, on the other.

The political structure of a city decisively effects its educational style, including fiscal policy. Fiscal restraints, in effect, flow from the political structure of the community, and it is within clearly defined limits that school boards, administrators, and in some instances, constituency-oriented political leaders, resolve competing demands. For the most part, local school financing can be typified as fiscally conservative, noninnovative, and generative of relatively little controversy. These patterns are supported in large part by the demographic character of most central cities. The property-owning white population, being generally older and having less stake in educational policy will tend to resist tax increases and reevaluation, as well as provide a constituency for conservative political and educational spokesman. Decision makers will endeavor not to alienate this segment of the population. Moreover, in those cities in which Catholics comprise a large proportion of white parents, school boards are aware of the costs of maintaining two school systems, and will tend to exercise fiscal restraint.

In short, pressures on most central city school systems operate in the direction of fiscal conservatism. Unlike the suburban system, the central city educational system provides direct benefits to a smaller proportion of taxpayers. The beneficiaries, and consequently the most deprived, are disproportionately those who contribute least to its maintenance—the young, the poor, and the Negro.

The Emergence of Black Separatism

As de facto racial segregation in the urban North has increased during the last decade, it should not be surprising that, after an intensive effort to eliminate school segregation, civil rights militants are now beginning to abandon this goal and are thinking in terms of black separatism and power. The emphasis upon "symbolic demands" which characterize much civil rights activity in the North does not appear to have contributed significantly to the welfare needs of the urban schoolchild. Confrontations between school boards and civil rights leaders have become commonplace, but often hard-won concessions—the acknowledgement of de facto segregation, the establishment of commissions, the sponsorship of racial censuses and research has come to be recognized as having relatively little impact upon frequently worsening educational conditions.

A change in goals and in the quality of protest was perhaps inevitable. The existence of school segregation soon came to be accepted as a given factor in urban ghettoes; its acknowledgement or elimination was no longer a civil rights goal, nor was its elimination deemed desirable as black militants began to talk in terms of black separatism and, most significantly, community control of schools.

How did this radical reorientation come about? There are several reasons, but it appears that the failures of the civil rights moderates to bring about measurable changes in patterns of urban school segregation after such changes had been promised were perhaps the most responsible. Studies of the integrationist phase stress the ineffectiveness of civil rights groups concerned with school segregation. Where school boards were sympathetic to the symbolic demands of civil rights groups, minor concessions were made; but where there was initial resistance, the appeals, demonstrations, and sit-ins had little effect.

The emergence of black power as an ideology, and four consecutive summers of increasingly destructive riots, have made the earlier demands of civil rights leaders look modest indeed. And with the release of the *Report of the National Advisory Commission of Civil Disorders* (1968) came official acknowledgement of conditions which civil rights moderate had been stressing 5 to 10 years earlier. By 1968, however, symbolic goals were no longer adequate. In education, the emphasis had changed from integration to local control

The emphasis upon black control of black schools and the attendant complications implied therein will probably dominate Negro strategy in the areas of race and education well into the seventies. Impetus for the movement has come from New York where a district supervisor system was initiated in 1965, partly in response to the demands of civil rights organizations. It is probable that with the growth of Negro awareness of the rigidity of local systems, and white resistance to efforts to significantly reduce school segregation, the demands for neighborhood or local control of the school will increase in other cities.

It is possible that for several reasons these demands will gain a more sympathetic hearing in communities which earlier rejected school integration demands. First, local control would implictly legitimate de facto school segregation. Black control of black schools implies that these schools will be maintained as such and that, in fact, patterns of urban school and residential segregation will be perpetuated. To many whites the acknowledgement of urban apartheid may prove reassuring. Second, the emphasis upon local control implies that programs may be adapted to the special needs of special populations. In this respect the possibilities for experimentation and innovation inherent in decentralization are consistent with the once-radical proposals of some critics. Finally, demands upon local control are ones which perhaps can be met by local communities. Unlike demands for significant bussing programs, the redrawing of district boundaries, or even the establishment of educational parks, local control of schools involves few costs and may ultimately provide substantial benefits. It is, however, a solution born of desperation, and must be continually regarded as such.

The centralization of big-city school systems in the past has served to protect them from the pressures of minority groups who are not part of the power structure. Decentralization, on the other hand, especially if it includes locally elected school boards, could give the Negro and other lower class groups who are concentrated in certain parts of the city and isolated from the dominant power structure more control over educational policy. But more needs to be known about the ways in which such control can be shifted and its consequences. How extensive, for example, is the reaction to educational bureaucracies in the central city? Who is actually involved and are the leaders representatives of the general sentiment of those populations currently most isolated? How will local control affect educational standards, and will laymen be able to lead or control the educational bureaucracy any more effectively than teachers have been able to do, or to produce more effective results than have been produced to date? And what will be the effect of such decentralization on possible population shifts and on the allocation of metropolitan, State, and Federal resources?

Bureaucracy and the Deprived

More than others, the poor and other disabled groups are deprived of the means to directly control the large and complex world with which all must cope. They do not have access to the centers of decisionmaking, which lie behind the walls of well-guarded, relatively autonomous, bureaucratic systems. Even so personal and strategically important an event as the education of one's children, which virtually determines their life chances in contemporary society, is well beyond the direct control, or even meaningful influence, of the typical lower class parent. The reasons and the mechanisms responsible partly are embedded in the bureaucratic structure of the schools, the police, the welfare agency, the workplace and other middle-class establishments.

Formal organizations become a major contingency in the lives of nearly all deprived groups. For example, there are nearly 900 separate agencies or facilities of one kind or another for the blind in the United States. When it is realized that there are only about a million blind people in the country, it becomes apparent how significant such organizations can be in their lives.

The complicated networks of bureaucracies have literally transformed the phenomena of deprivation in our society. For some they are opportunity structures for moving out of the culture of poverty; for others they are places to go for rehabilitation; for still others they are the only places at which to obtain remunerative employment; and for some they are places which are to be avoided at all costs. These organizational networks are, for many deprived persons, especially the handicapped, a fact with which they must contend.

All complex organizations share the problems of reconciling two fundamental dilemmas. The first dilemma involves a tension between an organization's desire for autonomy on the one hand, which it needs in order to maintain standards and responsibility for its effectiveness and to give coherence to its direction, and on the other hand its necessary dependence on outside groups, including taxpayers, clients, and customers, for public support and resources. The second dilemma is closely related to the first. For administrative convenience and effectiveness, organizations must be coordinated and have some uniformity in policy, while remaining adaptable enough to serve diverse types of clients with whom uniform treatment and highly coordinated tasks are not always effective.

Even when all the requirements of due process are met at every stage in the relationship between the organization and its clients, there is still an enormous range of variation in handling and disposition that is not regulated by legal prescription but depends upon the informed or uninformed judgment or guesswork of a multitude of functionaries. Their decisions and actions are often of low visibility and unchallengeable, not only by the general public and the client, but also by other officials within the system. Their obscurity perhaps is just cause, in fact, for critics who charge that the primary objective of some welfare functionaries is to keep costs down, in the process denying benefits to people who are legally entitled to them.

Much more needs to be known in our increasingly technocratic society of procedures to safeguard the rights of people in their dealings with "experts" and professionals in private and public bureaucracies. The feeling that one is the object of forces beyond one's control becomes more salient when one also believes these uncontrollable forces to be arbitrary, capricious, and malevolent. It may be further hypothesized that welfare and other recipients of community agencies are not only afflicted by a sense of powerlessness but also are afflicted by a sense that they have no choice but to adopt stances of abject passivity in order to survive.

It is not a question of the motives and intent of those who decide, whether they be social workers, policemen, or teachers. Rather, it is a question of the relative autonomy and inscrutability of the workings of the institutions themselves. Is it possible and feasible to provide the deprived with some form of continuing representation, somebody whose primary responsibility is to the child or his family and not to the agency, somebody who has a right to be informed, to question, challenge, and advise at any stage in the administration of public health, education, and welfare? Those who pass through these agencies are typically of the deprived and disadvantaged classes, and there have been few to speak for them.

Concomitant with the growth of helping organizations, there have also developed professions related to disability. Examples are Rehabilitation Counseling, Work for the Blind, and Work for the Deaf. The legitimacy of these professions is based upon their practitioners' claims to specialized knowledge and expertise with problems of disability. Through the years, their knowledge has become increasingly formalized, so that most organizations that help stigmatized people have more or less distinctive and explicit approaches to the treatment of these disability groups. These approaches consist of basic beliefs and assumptions about a disability. These beliefs and assumptions pertain to the fundamental problems that are supposedly experienced by people possessing a stigma; the reactions of people who have acquired a stigma at its inception; the necessary and appropriate solutions to these problems; and the dominant reactions of such people during each successive stage of their rehabilitation. These beliefs and assumptions guide practitioners as they deal with clients in the clinical settings of helping organizations.

Moreover as a rule, the key indicator of the success of a helping endeavor is the degree to which the client has come to understand himself and his problems from the perspective of the professional worker who is trying to help him. At the same time that he learns to understand himself from this perspective, the disabled person also learns the attitudes and behavior patterns that "go along with" that particular approach to disability. Many of the attitudes and patterns of behavior of disabling roles are therefore taught to stigmatized people by professional workers in the context of large bureaucratic organizations. Through the same mechanisms which operate in interpersonal relationships, the beliefs about disability which are held by rehabilitators and other workers are actualized in the behavior of their clients. It is through activities such as counseling, group therapy, recreation, and various other aspects of rehabilitation that the person who is disabled acquires the skills that professional workers, rightly or wrongly, regard as appropriate and desirable.

Education: Specialized Versus Comprehensive Goals

In an era of specialized organizations responsible for different clientele, it is remarkable that there seems to be no organization which has accepted the responsibility for the multiple-failure children within the schools or for dropouts once they have left the system. Schools tend to defend this division of responsibility by pushing much of the blame for achievement back to the home and the community. The Coleman report, among others, has provided evidence in support of this ideology. But this strategy has left lower class parents somewhat defenseless. They are held responsible but do not have either the knowledge or the power to affect the situation.

Can schools be designed to overcome handicaps stemming from the home? Far more needs to be known about early school and preschool programs. Also needed is more experimental research on remedial year-round programs, modeled after the OEO parent-child centers which might involve teams of school personnel working directly in communities, treating whole families and permitting older children to accept some of the responsibility for teaching the younger ones.

We also lack basic research on the way "dumping grounds" form, i.e., the process of goal displacement whereby the academic objectives of some schools are replaced by custodial objectives. This process seems to be related to the fact that in what is an otherwise highly specialized society, schools have continued to function as comprehensive-care centers and teachers are given very few special resources for handling the more "difficult" cases. Given the broad range of clientele and objectives, with limited resources and disproportionate pressures from various segments of the public, schools tend to specialize only informally—e.g., they develop a distinctive competence on college preparation, but at the expense of being more effective with the difficult children. Perhaps only if and when lower class parents are able to organize more effectively will special programs be designed for their children, which have objectives other than custodial care. "Grouping" has served similar functions; although there is little evidence that children learn better under grouping arrangements, it is likely that grouping allows teachers to specialize somewhat and thus simplify their jobs and develop special competencies.

It follows that at least part of the bureaucratic deprivation problem can be traced back to the education which prospective teachers receive. Our colleges and universities have been slow to design programs for educating teachers to deal with the culturally deprived children. While such programs are now slowly evolving, more must be learned about the organizational constraints on colleges which have prevented them from adapting more rapidly and more effectively. It appears that they are producing "bureaucratic missionaries" intent upon converting lower class children into middle class, but without being able to promise them real social mobility. At issue is the inordinate amount of conflict among teachers, as well as between teachers and lower class parents, regarding the appropriate emphasis to be given to the objectives of teaching children for social mobility as opposed to teaching them to cope more effectively with their present environment. These are not necessarily mutually exclusive alternatives, however; for example, in some instances it may be more appropriate to teach a child to use English as a second language and provide him with the skills to cope more effectively in both the lower class and middle-class cultures without compromising his position in either. There is still a question as to how well inner-city teachers understand lower class cultures, living conditions, and the realistic alternatives that are open to these children.

Research is needed, then, on the ways in which colleges maintain their boundaries and on the feasibility of different approaches which will change the teacher-training programs. The National Teacher Corps was established by the Federal Government in order to bring about such changes in colleges as well as in public schools, but as yet little is known about its impact.

The professionalization of teaching represents a form of specialization as well. While there is in the professional role a strong component of concern for the unique problems of various clientele, this potential has not always been demonstrated in teaching, at least not to the satisfaction of those lower class parents in the major cities now participating in the Civil Rights movement being directed against the public schools. Some lower class parents seem to be contemptuous of teachers and mistrust their motives. Teachers, on the other hand, refuse to permit more lay control, especially at a time when they are achieving concessions from the administration. Little is actually known about the reasons behind these tensions.

Nevertheless, part of the problem appears to stem from incompatibilities between professional and bureaucratic principles, and more specifically, from the dominance of the latter in large city systems, where teachers are attempting to increase their authority. There is some speculation that school bureaucracies will adapt to professional principles but more research is needed, as thus far there seems to be little evidence for it. Another hard question for which there is as yet no answer is whether teachers would be more responsive to lower class clientele if they were not so constrained by the bureaucracy and lack of facilities. Experimentation on giving local schools more autonomy is urgently needed. Here the efforts of parents to decentralize systems in order to disperse political control, discussed earlier, must be distinguished from the efforts of teachers to decentralize administrative control. These are two fundamentally different strategies, the relative effectiveness of which should be compared.

But the degree of their responsiveness to clients also depends upon the relative strength of teachers' orientations to their colleagues as opposed to their orientations to clients. It is conceivable that some professional standards conflict with client welfare in teaching, just as they do in other professions, in which case, professionalism can be disfunctional for clients. For example, professional standards of objectivity, performance criteria, etc., can be as constraining and create as much social distance with respect to students and teachers as the bureaucratic ones. Likewise, professionalism of teachers (like aid grantors) sometimes means that personal considerations are suppressed and status discrepancy between the teachers and clients is increased. Until a specialty in teaching the culturally deprived evolves, with a special career pattern, the possibility must be entertained that *less* professionally oriented teachers and untrained laymen and aides might be more effective with lower class clientele than are the professional teachers.

Despite the proliferation of special programs, the dedication of teachers and welfare functionaries, and the best intentions of community leaders, we do not know how significant the school may be as an agent of change in the urban ghetto. There has been much innovation, but apparently very little change to date. Moreover, the emphasis has been giving lower class children concentrated doses of the same thing—more teachers, more guidance services, and more field trips. Many of those closest to the problems of psychosocial deprivation have tended to support piecemeal remedial and enrichment solutions. The objective: to establish the middle-class system in the slums. But thus far, the system itself has been off limits for serious study in this context. While the more traditional structure perhaps has benefited some people living in the culture of poverty, it probably is also responsible for the growing tensions between parents and the helping organizations as well. There is ample reason to believe that these organizations are at least partially responsible for maintaining and even for creating some of the conditions of deprivation.

PART V: SUMMARY OF RESEARCH ISSUES

There are certain hazards involved in any attempt to summarize or identify major research issues. While many different kinds of questions, with varying degrees of relevance to the problem of deprivation were discussed in earlier sections of this chapter, and at the risk of overlooking a number of genuinely or potentially significant questions, it nevertheless may be fruitful to briefly outline here several key substantive issues of a sociological nature, i.e., focal points around which a variety of propositions and questions can be formed. The general issues listed below are so central to the problem of psychosocial deprivation that the implementation of any of the massive and costly intervention programs now being contemplated by legislators and others would otherwise appear to be taking an enormous, even though perhaps necessary, risk without some reasonably firm understanding of them.

1. It has been implied that deprivation is "bureaucratized" when helping agencies are either so insulated from public scrutiny or so impersonal and universalistic in the implementation of their legal prescriptions and formal goals that their clients, as a consequence, are not well served. Administrative rules and regulations may be cumbersome and are often slow to change. While it is clear that certain adaptive or informal mechanisms often arise under such conditions so that "the job gets done," the impersonality of the agency and the needs of the client are not always congruent. Nevertheless, it is highly probable that in the future there will be less reliance upon the home and similar communal or neighborhood groups and more upon bureaucratic schools, welfare agencies, and the like. There is an inherent danger in this trend, however, since bureaucracies may be equally incompetent to deal with the problems of the deprived. Therefore an attempt should be made to discover:

a. What functions related to personal growth and development are best accomplished in the home and what functions might best be served by helping organizations?

b. What is the impact of disability of one family member upon the lives of other members of the family?

c. What kinds of institutional arrangments are suited for different constituencies of the disabled and the deprived?

d. What exactly are the socialization outcomes produced by rehabilitaion and other helping organizations, such as the effects of Aid to Families with Dependent Children on the integrity and dependency of families?

e. What differences in the above respect can be found between the recipients and nonrecipients of organized assistance?

f. Do helping organizations alienate their clients and foster dependency by their very size and complexity and, if so what can be done, if anything, to develop participatory democracy by the clients themselves?

2. Two quite different analytical models usually are employed in the discussion of poverty and the poor, each of which has quite different implications for social policy. One perspective approaches the problem in terms of cognitive life styles and the intergenerational transmission of unique traits belonging to an integrated subculture of poverty. A second approach is to view deprivation in terms of limited access to the institutionalized means for achieving culturally prescribed goals. The unequal distribution of basic educational, economic, and political opportunities is said to be at the root of the problem. From the first perspective, critics claim that it does not matter much, or it is at least insufficient, to alter opportunity structures, since the poor will still "feel and act" poor. Therefore, the only real solution to the problem is to alter either the content of the subculture itself, or at the very least, to reduce its impact upon the children of the poor. Proponents of the second perspective argue, on the other hand, that it is quite impractical and perhaps impossible to change the content of the culture of poverty to any significant extent since there is no direct way to intervene upon the lives of these people and, besides, the culture itself is merely an adaptation or response to their limited economic and political means. From this standpoint, the only solution lies in altering the opportunity structure, which may require both a national economic security plan and a much expanded effort in the areas of education and employment. Some questions for which we still need answers are:

a. What are the intervening social and psychological mechanisms or variables through which a change in opportunities might lead to a change in motivation, efficacy, and concomitant values?

b. Is it possible to capitalize upon the culture of the poor to bring them into the mainstream of American society, and how could this be accomplished?

c. How are the various elements in the culture of poverty interrelated, which are more central to its maintenance, and do these particular attributes lend themselves to manipulation by social intervention programs?

d. What are the short run and long range effects of moving *into* the culture of poverty and what are the corresponding chances of moving *out* again?

3. The emergence of black power both as a new ideology and as a form of separation is complicated by two factors. First, despite the heavy concentration of Negroes in urban centers and the increasing number of all-black schools, the Negro has made significant inroads into certain major areas of our educational, economic and political structures in the past 5 years. Many of the most selective secondary schools and colleges in the country

now admit and often actively recruit Negro applicants. Major academic institutions and industrial corporations are now competing for qualified (and often less-than-qualified) Negroes to add to their staff. Likewise, significant although not wholesale improvements have occurred in the registration of Negro voters and in the number of Negroes in public office. How will the Negro and white communities adjust to what appear to be quite contradictory trends, i.e., separation, on the one hand, and integration within most of the central areas of institutional life, on the other?

Secondly and closely related to the above question, relatively little is known about the extent to which and manner in which an ethnic or racial subculture can maintain its group identity without seriously restricting its members' access to political power and achievement opportunities. Sociological and anthropological work have consistently shown that the American society is not and has never been a true "melting pot." Rather, cultural pluralism persists. Although some authors frequently dwell upon the positive attributes of a pluralistic society, it is also clear that the maintenance of most ethnic and racial minorities in American history have been associated with serious patterns of deprivation and discrimination. Is the case of the American Negro any different?

4. Deprivation frequently is the outcome of extant disparities between the needs of society and the individual. Throughout this chapter, we have emphasized the point that societies largely shape individuals to somehow fit into the orderly arrangement of existing social structures. We also have noted some instances where social forces have disrupted the lives of individuals or otherwise limited their usefulness and means to education or gainful employment. Examples included the aged whose skills have become obsolete, as well as both the mentally retarded and the school dropout for whom there are few unskilled jobs available. Seldom, on the other hand, does society change to fit the individual, whether he is physically or mentally disabled or a member of a specifically deprived social group or class. It would appear especially profitable to learn more about:

a. How the demand for labor can be checked or altered in such a manner as not to outrun the supply of available manpower, i.e., in the sense of forcing unwanted persons onto relief rolls.

b. Whether involving marketable skills or not, what new roles can be devised for the aged and disabled—including the mentally retarded—which are less ambiguous and more socially rewarding than the kind of roles to which many are presently assigned?

c. What are the actual functional limits imposed upon the capacities of different disabled and deprived persons?

d. Specifically, in the case of the aged to what extent do retirement policies reflect the actual desires and physical capacities of older persons?

e. What social mechanisms protect the inept from overt discrimination in education and employment, i.e., discrimination based upon stereotypic beliefs about stigmatized persons rather than considerations of their individual worth?

5. A final focal point involves a unique relationship between school and work, one which may help explain who the culturally deprived are or will be. The labor market largely determines how much and what kind of education is presumably needed for different kinds of jobs. Up through at least the second year of high school, however, there is actually very little differentiation in the basic content of education. Nevertheless students who reach their sophomore or junior year are differentiated. Most have been tracked along different academic ability routes since the early grades. Their academic standing by the time they enter high school essentially will determine who will finish or drop out, who will go on to college, and who will go to graduate school. The level of educational attainment reached, in turn, determines one's point of entry into the job market.

A fundamental problem here is that from the first grade to entry into graduate school the same set of "academic" criteria have been used to select and sort people out all along the way with very little direct evidence that the particular criteria that have been used are at all related to job performance. Recent studies consistently have been unable to find a measure of occupational success which correlates to any significant extent with the academic aptitude or classroom performance of persons who were enrolled in the same curriculum and who had reached the same general level of educational attainment. It appears that the educational system may be structured in such a way that large numbers of disabled and deprived children, particularly those of the poor, are not being given the opportunity to gain employment in some jobs at which they could perform reasonably well. They are being tracked out of the competition by the schools on the basis of what frequently may be irrelevant criteria. More information is needed:

a. Are there new teaching techniques that could be introduced or structural changes made in the schools on a fairly broad basis which could salvage those who now fail to meet the standard academic criteria?

b. What kinds of abilities other than those now tested could be employed profitably in the educational selection process, i.e., in terms of those aspects of the growth and development of students which have to do with becoming useful and productive employed adults?

c. Are such new measuring criteria sufficiently independent of the traditional measures that most individuals could do well at least at something? Or are academic and other kinds of useful abilities all so highly related to one another that those individuals who fail on the new tests would be virtually the same individuals who failed under the old system?

PART VI: RESEARCH STRATEGIES

Even a cursory review of social research in the area of concern prompts mixed feelings. One is immediately impressed by the number of researchers and the volume of their work, but one is depressed by the results of their efforts and the questions that remain unanswered. How well the social scientist has fared of course depends largely upon the standard against which such work is measured. At the outset, it must be granted that social scientists have not done well in predicting the course of human events. The rise of black separatism and militancy are only examples which could be multipled. At the same time it must be granted that social science has sharpened insights into the processes involved and there have been some tangible successes. Not the least of these successes have been the discrediting of a considerable body of myth and "commonsense," and the delineating of basic research strategies and issues.

High priority must be given to strategies which more clearly describe the nature of the groups involved and the dynamics of the processes leading to deprivation. Nothing so accounts for the unreality and minimal payoff of the research as does the practice of reifying and acting as if the constructs actually exist (*the* poor, *the* blacks, etc.) when it is not certain that they do. Thus, further refinement is needed of diagnostic tools and terminology. S. M. Miller, for example, offers a sound illustration of diagnostic advancement with his admittedly crude, but productive division of poor Americans into four types: stable, copers, skidders, and unstable. Similarly, the Minuchin research team reports the existence of five significant types: the disengaged family; the enmeshed family; the family with the peripheral male; the family with nonevolved parents, and the family with juvenile parents. Likewise, the concept of "hard-core" unemployed fairly begs for immediate replacement by more precise and useful subconcepts, such as "hard luck," "underskilled," and "demoralized" long-term unemployed, three possibly distinct types. Similarly, the concept of "school dropout" perhaps should have long since been replaced by a host of subconcepts, such as "walkout," "pushout," 'pullout," "fallout," and "failout." It is important then to secure broader professional use of classificatory tools and terms such as these. Refinement and precision is needed in identification; also needed is an increasingly common vocabulary for the effort at professional discourse and development.

It need be reiterated that the concept of psychosocial deprivation, like any concept, may be viewed differently from different vantages. Being socially disadvantaged may be conceived as an objective circumstance measured by a fixed standard developed by professionals or other persons judged by the society to have the competence to make such evaluations. At the same time social deprivation has a subjective side—the individual's view of his position relative to that of others whom he perceives as being better or less well off than himself. At all times the definition is a social fact; it always involves norms which have an origin in the social system. As there are no absolute criteria, problems of dependency are quite susceptible to distortion constructed within the social milieu. Adequate appraisal of dependency, then, requires investigation of socio-structural elements. In line with this approach a number of other research strategies arise.

It becomes apparent that research of a general nature is badly needed on the social factors of deprivation and the generic characteristics of the deprived; and, at the same time, research of a highly specific nature is needed which distinguishes the differences between deprivations that arise from a social definition of a physical disability, for example, and that which arises from a social definition of racial characteristics. Also, it is necessary to determine to what extent are the social handicaps of the several disadvantaged groups related to their "disabilities" and other personal characteristics per se, and to what extent to the social definition of these elements.

It is now recognized, too, that many aspects of psychosocial deprivation derive not from one factor but from a constellation of factors. Studies to date indicate that a good home can compensate for a poor school and a stable family for poor housing. But the constellation of impoverished environment, overcrowded housing, substandard schools, etc., add up to an effect greater and different than that which would be anticipated from any one factor alone. However, it is only within the last few years that serious attention has begun to be given to the interaction of such variables, as against treating each as an isolated characteristic of the personal shortcomings of the poor.

It also is becoming increasingly clear that more longitudinal studies are needed. While some European social scientists have profited much from the study across many decades of the same carefully selected families, the practice remains rare in this country. In short, high research priority is the development of new techniques to help keep track of "panels" of selected families of "deprived," as well as "normal" Americans. Social security records, the proposed and controversial National Data Bank, and the clearcut payment of project stipends to cooperating families are all techniques worth exploring. The limited usefulness of "snapshot" research should soon give way to "motion picture" types of family history studies.

More research is needed in areas already studied. This is inevitable and understandable. "Findings" can be trusted only when several investigators independently confirm them. Research is so relatively meager that only in a few instances have there been adequate replication. An urgent need is for an enormous investment to confirm or modify existing research. This is particularly needed when research findings are inconclusive. One example from many that might be cited concerns the role of the family and the aged. There is still the question of whether or not present-day urban living, with its increased residential mobility and small family units, provides ascribed roles for the old as did former eras—including specific expectations concerning arrangements for living with or in some other manner being integrated into the families of their children. According to one position, the contention of Parsons (1959), Kirkpatrick (1963) and others, these changes have resulted in the isolated nuclear family as the major structural-functional family unit in urban industrial society. A contrary position is taken by other sociologists, Sussman (1960) and Litwak (1960) in particular. These sociologists assert that although there have been some changes in family organization, there still exists, as is evidenced by research on visiting and help patterns, an extended family adapted to the present conditions of occupational and geographical mobility. According to them the extended family is closely integrated with the nuclear family and, as evidenced by continued visiting and help patterns, they have a functional supportive relationship to the nuclear family. The third position, taken by Rose (1960) and supported by Miller (1965) and Adams (1968), is that to some extent both these positions are correct—that the extended family did deteriorate in Western culture but has retained its integrity despite the geographic mobility.

One of the major deficiencies in the research concerns delineation of the mechanisms by which individuals cope with deprivation; and a second is an analysis of the process by which individuals become deprived. Some work, of course, has been done in each area. It is known that individuals may cop-out; they may accept the role; they may play the role but it may be really a put-on (actually they are conforming only minimally); or they may resist the stigmatized role. More research is needed on the various accommodations and the reactions associated with each.

Studies of the processes by which deprivation occurs may be the most difficult and yet the most potentially rewarding of all. The need for good historical data becomes apparent at the outset, for experiences during the reconstruction period, during the war periods, and during the early days of industrialization have relevance.

PART VII: IMPLICATIONS FOR PUBLIC POLICY

Human interaction is, in one sense, a series of bridges. Among the most important is that between social research and public policy. There is an obvious need to bridge the dangerous gap (that may be widening) between what is known and what is put into effect. Provocative in this connection is the 1968 statement of the American Orthopsychiatric Association with regard to the plight of handicapped, deprived, and disturbed children: "There is no field of human welfare in which there exists such an enormous gap between recommendations and action."

A social work professor recently stated the problem quite plainly: Of that profession's nearly 50,000 academically trained workers, he claimed that only 10 are competent to do authoritative studies of major issues confronting the profession, such as the matter of income redistribution. Only two or three are thought competent to discuss the so-called population problem. One wonders why are there so few competent researchers available in the social welfare area? Only when some data-supported answers are available from social workers or others, will it be possible to know how to pursue alternative courses of reform.

Despite the risks involved, practice obviously cannot always be delayed pending research findings whose periods of gestation are often long and unpredictable.

The problems this Nation faces so cry out for answers that there must be reliance upon commonsense, prior experience, and best judgements, often in the absence of scientific data.

Although action prior to research can be excused when none is available, the absence of adequate evaluative research in ongoing programs is inexcusable. Program after program has been instituted without adequate research built in. This insures that improvement, if any, will come only on a trial and error basis. Such an approach could be understandable in the prescientific era of the 13th century, but it is completely unjustifiable today.

There is an obvious and pressing need for research that evaluates the social and personal consequences of our intervention programs. We cannot assume that good intentions automatically result in good works. In fact, it is probably safer to assume that there are negative side effects in even the most helpful of programs. The stakes are so high and the investment of human economic resources so great, that both logic and practicality dictate the need for evaluative research. Impact research of the kind envisioned is an innovation; and like all innovations, it will require accommodation and understanding on the part of both the researcher and the practitioner.

As great as the gaps are between research and practice, a greater gap may well exist between the firmly held beliefs of the general public and those of the scientific community. If our society were a scientific autocracy, this would be of little concern; in a democratic society, it is critical.

Planning for social action and the selection of treatment goals involves sharing certain underlying values. It is important, therefore, that there be an awareness of the values and standards of all who are involved in such decisions—those for whom interventions are being planned as well as those who act as interveners.

When the values and standards of all concerned are congruent, the general directives for social action are clear. When discrepancies exist—either among the definitions of values, among the definitions of the rights of the deprived, or in the picture of reality—they must be taken into consideration in making decisions concerning research and interventions.

The scientific community must develop the means of effectively communicating with the general public. The contributions of all the official agencies are enhanced by the confidence they inspire and the cooperation they enlist from their publics; and the most useful of these contributions are probably the ways in which the agencies articulate with and enhance the neighbor-

hood, the school, the place of work, and so on. Therefore, there should be a high priority on research directed to the ways in which the agencies see the areas in which they work or the populations that they serve, and how the latter in turn see them; how the results of the actions of each depend on the complementary actions of the others; and how the agencies and their publics interact to enhance or thwart the fullest contributions of each to the common objectives of the community that comprehends them both. This is nowhere more manifest than in the relationships of those agencies now serving the deprived and disadvantaged who, to a large degree, are alienated from and even hostile to the very organizations that are designed to help them.

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Chapter IV

BIOLOGICAL SUBSTRATES OF DEVELOPMENT AND BEHAVIOR

Donald Lindsley and Austin Riesen

Papers Contributed by

DOROTHY EICHORN	Effects of Biological and Psychosocial Deprivation on Physical Growth and Motor Development.
SEYMOUR LEVINE	Neuro-endocrine Factors in Mother and Infant.
DONALD LINDSLEY	Growth, Maturation and Development.
G. E. MCCLEARN	Contributions of Genetics to Biological and Behavioral Development and the Influence of Various Deprivations.
B. S. PLATT	Nutrition and Psychosocial Deprivation.
J. PRESCOTT	Psychobiology of Maternal Social Deprivation and the Etiology of Violent Aggressive Behavior: A Special Case of Sensory Deprivation.
AUSTIN RIESEN	Relations Between Sensory Deprivation and Development of the Nervous System.

Chapter IV

BIOLOGICAL SUBSTRATES OF DEVELOPMENT AND BEHAVIOR

PART I: GROWTH, MATURATION AND DEVELOPMENT

Introduction

Behavior is the endpoint in a series of consequences and interactions which begin with the genetic history of an organism, be it microbe or man. Growth, maturation, and development of an organism are embodied not only in the form and function with which it is endowed, but also in the modifications of these imposed by environmental influences. The chemical composition of its genes, as well as its subsequent soma, are important in the determination of the form and function of the organism, but perhaps no less so than intra- and extra-cellular exchange, intra- and extra-organismic relations, or physical, mental, and social interactions among organisms.

Thus, to comprehend anything as complex as human behavior and its development, whether normal or deviant, requires a broad spectrum of scientific effort and talent. The anatomist and physical anthropologist may provide the dimensions and methods of evaluating gross structure, but the microbiologist and biochemist are required for the elaboration of the fine detail and the composition of protoplasm. The physiologist and neurologist are needed for the study of the interaction and integration of bodily systems. The behavior of organisms, though not the sole province of the biologist, psychologist, psychiatrist, and sociologist, is heavily weighted in its basic aspects for these behavioral science disciplines. Numerous are the specialized areas in the health sciences concerned with human origin and development—the obstetrician for prenatal and early postnatal life of the infant, the pediatrician for the prolonged period from infancy to postadolescence, the otologist and ophthalmologist for special-sense deficits and evaluations. In the sphere of acquisition of knowledge, the educator is paramount. In the basic areas of perception, motivation, learning, and emotion, the psychologist seeks not only to understand these processes and their underlying mechanisms, but to deal with deficits and deviancies. The psychiatrist is concerned with the more severe aspects of mental health and psychopathology, but also with preventive adjustment measures.

Of immediate importance is the problem of how to capitalize upon the Nation's facilities and professional talents and brings these together in a more effective and coordinated way so that a powerful research attack may be made upon some of the country's pressing health, education, and adjustment problems. Notable is the current high level of interest in mental retardation, but equally significant are the many other disorders of the physically handicapped and those involving special senses of hearing and vision. Problems of emotional adjustment, which not only interfere with the social adjustment of the child but often are the cause of educational maladjustment, must be dealt with. The entire matter of normal growth, maturation, and development is greatly in need of study from the viewpoints of physical, mental, and social adjustment if we are to identify, understand, treat, and hopefully prevent those deviant aspects of behavior mentioned above, but even more important is the need to study and understand behavior in humans (and in animals) in order that every individual should have the opportunity to develop to the fullest extent of his capacities, physically, mentally, and socially.

The existence of deprivations of various kinds, both individual and collective, has long been recognized in underdeveloped countries where nutritional, health, education, social, and cultural advantages are lacking. Only recently, however, has the spotlight been brought to focus upon the many loci of similar deprivations which exist within our national borders. With this recognition has come alarm and concern for the consequences thereof and surprise and almost disbelief that such conditions could exist in a land of plenty where opportunities abound for many, but obviously not for all. The rapid rise of the United States to a position foremost among the nations of the world in terms of health and living standards, and economic, social, and cultural advantages, has perhaps blinded us to the fact that deprivations exist among us. Furthermore, only gradually has there come to be appreciation of the role that deprivations and impoverishment of environments may play in the basic foundations of individual behavior and of the complex social order which resides in the family and home, and in the local community, as well as in the nation at large. Nevertheless, it is obvious that there must be increasing concern with deprivation and impoverishment of all kinds at both the individual and group levels.

In what follows it will be impossible, for space limitation as well as other reasons, to deal in any comprehensive way with growth, maturation, and development of total organisms biologically and behaviorally. Because of the importance of the brain in the integration of behavior in total organisms at all levels of adjustment, the following discussion will be limited to brain and behavior aspects of growth and development. Knowledge of the brain and its development has proceeded very slowly during the past century. Knowledge of brain and behavior relationships has proceeded even more slowly, but despite this, a vast literature has developed during the past 30 years. Only an exceedingly small fraction of the relevant information can be touched upon, mainly by way of example rather than in an effort at comprehensiveness.

Brain Maturation and Reflex and Behavioral Development

Considerable behavior is in evidence and evolving steadily *before* birth in any given species. The first spontaneous activity observed in the human embryo is the myogenic heart beat at about 3 weeks; the first reaction to mechanical or electrical stimulation occurs at about 2 months and tends to be limited to the oral and facial regions. The earliest spontaneous movements occur at 9 weeks, and the grasp and plantar reflexes are observed at 11 weeks. Newbery (1941) reports that mothers generally experience internal bombardment beginning in the fourth month and activity of the fetus increases steadily thereafter until the last month of pregnancy. Two or 3 months prior to birth, all sense modalities are responsive to stimulation and their reflex linkage to muscles can be demonstrated by the seventh month when all reflexes seen at birth are present, including the Babinski, the grasp, and the Moro reflex. These three are especially notable because of their relative complexity and because of their reversibility or complete disappearance within the first few months of postnatal life.

With respect to functional development of the brain prior to birth, Lindsley (1942) has demonstrated that the fetal electroencephalogram (EEG) can be recorded as early as the seventh prenatal month through maternal abdominal and uterine walls. At that time, rhythmic six to seven per second waves in short sequences were recorded, and these matched closely the EEG patterns recorded at birth in the same infant with the electrodes oriented around the anterior fontanelle over the precentral and motor regions. According to Smith (1939), such rhythms are common in the newborn infant over the sensorimotor region when the infant is relaxed and drowsy, but not during wakeful activity. The presence of such rhythmic activity in the seventh-month fetus, as well as in the newborn, corresponds with the histologic data of Conel (1939) who finds that the motor cortex of the newborn is more mature in terms of several structural criteria at that age than are other regions of the cortex, including primary sense zones. Dreyfus-Brisac et al. (1958), have found diffuse and poorly regulated electrical activity in the EEG of infants born prematurely in the seventh month. However, in contrast to the EEG recorded through the abdominal wall with the fetus in utero and bathed in warm amniotic fluid, such a premature infant exposed to the environment is hardly apt to be relaxed or drowsy. The histology of the human cerebral cortex from the fifth fetal month through term shows progressive structural changes, with emergence of the full six-layered pattern at birth. Although apparently all the brain cells that the human organism will have (something of the order of 10^{10}) are present then, they require considerable growth and maturation of their soma, dendritic, and axonal processes, as well as myelination, before they can be considered structurally and functionally mature. However, it is becoming increasingly clear that electrical activities of various kinds, including spontaneous activity of the rhythmic sort as well as evoked potentials, are present or can be elicited in an immature and incomplete form long before the structure of the cortex and its constituent parts have matured.

Rose and Lindsley (1965, 1968) have found a precursor of the visual evoked potential present in the 4-day-old kitten. They followed its development, along with that of a later appearing specific visual input response which the earlier appearing response of 4 days gradually merged as the brain matured, until by 30 days, the typical adult form of the response was present. This particular transition in the electrical activity of the kitten visual cortex is mentioned because it may serve as an example of the kinds of change which undoubtedly occur in the human brain, though such changes would be spread over a longer period of time due to the longer period of brain maturation.

Several laboratories around the world have been investigating histologically and neurochemically the changes which appear to be concordant with such changes in the electrical development of the brain. This is extremely important work. It will be even more important to the understanding of brain and behavior relationships when it is possible to combine in a correlative way the structural, functional, chemical and enzymatic, and behavioral changes which undoubtedly follow somewhat parallel courses and have important interdependencies. Even the ultrafine structure of the brain, including the development of synaptic junctions in all of their fine detail, as studied with the electron microscope, have much to contribute to an understanding of the basic aspects of brain development, maturation, and function.

Once some of these interrelationships are understood, they may serve as guideposts in the further assessment of the necessities of prenatal maternal care and nutrition, a well as in the early identification of aberrancies due to disease, injury, endocrinological inadequacies, etc. Only in the grossest ways is there a little insight into the neurochemistry of the brain and nervous system, and even that cannot yet be utilized fully as correlative material to be related to structure, function, and behavior. The principle difficulty is in the timing of the events which one wishes to study and correlate with other types of information. However, much progress is being made, and there is considerable hope that with collaborative research among the various disciplines, the time will come soon when combinations of techniques properly employed will greatly augment the amount of information that can be accumulated about the brain, its functions, and its normal development.

But to return to postnatal brain development and behavior, it has been stated that the motor area of the brain is one of the first regions to develop structurally and functionally as evidenced by the presence of initial brain rhythms during drowsy wakefulness. Over the sensory areas, which Conel (1947) in his monumental volumes on structure at birth, 3 months, 6 months, 12 months, and so on up to 6 years has provided for us, the histology shows certain marked changes between birth and 3 months, with some of brain cells increasing in size, apical dendrites growing in diameter and lengthening out and growing spines, basal dendrites ramifying extensively, and stellate cells sending out connecting links. These changes in the visual cortex by 3 months are paralleled by the onset of the three per second infant alpha rhythm, which comes in at that time. Still another parallel is in the behavioral use of the visual area, e.g., the Gesell and other infant tests include an item which indicates that a child of 3 months should fixate and follow with its eyes a dangling ring held over it. Other items of visual-motor use seem to signal the onset of functionality in the visual cortex, along with the electrical signs manifest in the EEG when the persistent alpha rhythm of three per second appears. Stimulation of vision by a flash of light will block the alpha rhythm showing that it is a reactive mechanism. Ellingson (1958) has shown that evoked potentials can be elicited by a flash of light, even over the visual area of the cortex in a newborn infant, though such potentials are immature and unstable, and manifest ready fatigability.

Lindsley (1939) and Smith (1941) have shown that the alpha rhythm of the visual and sensory zones at 3 months increases sharply during the first year, more slowly during the next several years, and finally levels off at the adult frequency of about 10 per second at about 10 to 12 years of age. Such a frequency growth function must be correlated with changes in chemical composition of the brain, its changing enzymatic and endocrinological status, its operational and behavioral functions, its learning capacities, its memory storage capacities, its emotional and social adjustment features, or something else, or possibly all of these. There remains much to be done along all of these lines of research endeavor. Answers may be waiting just around the corner if only the right questions can be asked and pursued with insight and ingenuity.

To return once more to infancy not only in the human but also in the monkey. The EEG of the monkey (Caveness, 1962) exhibits alpha-like rhythms comparable to those of the human infant at about 15 to 20 days, which as a landmark in his life span is comparable to three months in the human when the infant alpha rhythm of three per second appears. Caveness et al. (1960), demonstrated that the course of growth of the alpha rhythm in the human infant and the monkey infant follow very similar functions when the lifespan of the monkey and human are adjusted on the same scale. Lindsley (1964) has pointed out from the data of Mowbray and Caddell (1962), gathered in Harlow's Wisconsin Laboratories, that there are interesting correlations which may be made at least grossly between the behavior present in the monkey at birth (rooting, grasping, Moro) up to the age of about 15 days when these items disappear or become converted to voluntary grasp, startle response, etc. The onset of the alpha rhythm apparently signalizes the onset of cortical function with its inhibitory control as well as with its initiatory excitation possibilties in the emergence of voluntary motor control. Similarly in the human, the onset of the alpha rhythm at 3 months seems to signal the first organized use of the cerebral cortex, for an anencephalic monster, as has been shown by Monnier and Willi (1947), is no different in its behavior and reflex development than a normal human infant, although it has no cerebral cortex, and seldom exists beyond 60 days, with only its brain stem functioning as does that of the normal infant at a similar age. It is at this time also, that the reflexes which are normal to a human infant during the first month or so, such as the Babinski, grasp reflex, and Moro reflex, would be abnormal were they not to change at or soon after the third month when the cortex seems to become functionally integrated with the lower subcortical structures of the brain stem Thus, there are EEG, histological, and behavioral correlates already exhibited, but there are many more to be revealed. Behavior is a very complex thing and difficult to study; it takes much time and patience; much ingenuity in the design of clever and carefully controlled experiments to reveal orderly and meaningful data which can help us with our understanding of growing children including the significance of wholesome, happy, family, and community environments for normal growth and differentiation of behavior. But these are precisely the things that must be learned if there is ever to be meaningful and productive coping with underprivileged environments and the needs of the children developing in them.

Curiously, it is not always the direct attack on what seems to be the problems of adjustment in such a neighborhood as much as it is the seemingly unrelated basic aspects of research, such as have been discussed above, which in the long run may contribute to the overall solution. It is necessary to know as much as possible about those things which underlie behavior, social relations, nutrition, and health, and these often go back to the very roots of the organism, including the genetics prenatal and postnatal care of mother and infant disease history of mother and infant affectional attention of child and mother, interactions of child with siblings or other children, and a host of other factors, whose assessment often goes back to the brain or manifestations of its normal functional capacities as well as its aberrancies.

Effect of Enriched Environment on Brain Growth and Brain and Behavior Development

Over 100 years ago the famous Russian physiologist, Sechenov (1935, first published in 1863) emphasized the important and necessary role of sensory stimulation in all behavior, stressed the role of habit in the modification of response, described the potentiality of a central mechanism for augmenting as well as inhibiting reflexes, and elaborated upon the role of centers in the brain for determining whether the response to sensory stimulation would be augmented or inhibited. He proposed that sensory activity, within limits, is a process which preserves life and is necessary to it. He argued that there is a striving for it and an attraction to it (approach). Interference with the process tends to lead to dissatisfaction, displeasure, and avoidance or withdrawal from it (aversion). In assessing the capacities of the newborn child, Sechenov stated that "man is born with a very small number of instinctive movements . . . He can open and close his eyes, suck, swallow, scream and cry, hiccough, sneeze . . . The sensory sphere in the newborn child is also very limited for it does not know how to look, listen, smell, and taste." Sechenov even before Pavlov, had formulated the basis for conditioned reflexes and was exceedingly perceptive of human behavior from its simplest to its most complex social forms. Two things emerge from Sechenov's analyses of behavior: (1) that newborn animals and human infants strive for sensory stimulation and (2) that as searching or striving broadens, the associated behavioral reflexes to greater stimulation increases (e.g., general activity and excitement as observed in the neonate), until what he called "psychical reflexes" and inhibition appear with the development of the cerebral cortex. To go beyond Sechenov's view that an innate pattern of reflexes unfolds and matures and that each of these requires stimulation and exercise to remain effective and promote life, one would need to develop an elaborate neurobiologic theory. Sechenov argued that sensory receptors and sensory mechanisms are not a standby system, but that, on the contrary, through their reflex effector systems, they lead to active striving for additional stimulation. In support of this contention Lindsley et al. (1964) reported that in monkeys kept in isolation and darkness from infancy up to 3 years except for unpatterned light stimulation 1 hour each day as a prophylactic against retinal degeneration, manifested bizarre forms of behavior and activity which suggested sensory hunger and the necessity to provide sensory stimulation by biting themselves, slapping their limbs, and moving ceaselessly about the edge of the cage. Electrical recordings of their brain activity showed paradoxical or reversed trends in their responsiveness to light stimulation, manifesting synchronization when a normal monkey would have shown desynchronization of brain rhythms with activation, etc.

As Child (1924) and Herrick (1924) argued years ago, there are excitation-conduction gradients which determine the direction and the extent of growth of sensory fibers and their connections within the central matrix of the brain. These are dependent upon the amount and type of stimulation provided and regenerated by the reflex activities engendered and the learned behaviors promoted with respect to the environment. This can only mean that the brain itself assumes different proportions as a function of the amount of stimulation.

This point of departure leads to some interesting experiments which have in recent years been conducted by Rosenzweig et al. (1962), and summarized recently by Rosenzweig (1966), in which environmental complexity and enrichment of the environment of rats has led to anatomical and chemical changes in the brain. There was a gain of weight of the brain and a change in the activity of the enzyme acetylcholinesterase (AChE). Perhaps more important, the learning ability on certain types of problems improved. It is not yet certain whether the latter depend on the former, or are simply concurrent changes or manifestations of some unknown underlying factor. If however, such studies continue to show favorable results, the extrapolations which Rosenzweig has suggested for humans may well be worth considering. Reinforcing this concept in a reverse direction, Krech et al. (1966) have shown that depriving rats by an impoverished environment and by social isolation has had reverse effects from that of the stimulation provided in the enriched environment. Though one must beware of generalizing upon the basis of a few relatively early results, the promise of these experiments and the directions of their mode of application cannot but challenge those who are concerned with the ghetto and the isolated environments of certain of our more unfortunate fellow citizens and their offspring. To be able to provide from infancy onward, a natural sequence of activities, enrichments, and motivating opportunities, not only for the underprivileged but for those individuals who for other reasons (family, community, etc.) are stimulus and activity deprived, might prove a powerful boon to the general upgrading of our national life and productiveness.

Role of Motor Exercise on Brain and Behavioral Development

Like sensory stimulation which tends to generate it, motor exercise and the opportunity to be active, are necessary not only to the general welfare of the individual but to the building of a physique which enables one to acquire even more forms of activity. It is not simply the motor activity, which if prevented completely would lead to atrophy or disuse in major muscle groups, it is the failure to provide a form of amusement, entertainment, and a groundwork for the building of motivation influences which bodily restrictions and lack of exercise engenders. To be active as a child means generally that the child is a participant in games and in social interactions with others; games have rules which must be abided by if the game is to go on successfully and living by the rules of the game is a powerful conditioner of other attitudes with respect to rules, regulations, the law, etc. Many athletes who have played by the rules and learned to live by the rules, as well as to submit to the discipline required to train for the game, are the first to admit the benefits which accrue to sports over and beyond the benefits of physical exercise.

Role of Playgrounds, Parks, Gyms, etc., on Incentive to Exercise

Many people are familiar with "Dead End Kids" and "A Tree Grows in Brooklyn," where the background environment was one generally devoid of opportunity to play, live a normal child's life, and exercise in games rather than climbing tenement stairs or walking miles to school. Again, it is not only the opportunity to exercise, but the stimulation of playground instructors and other children imbued with the spirit of the game that counts. Provision should be made for playgrounds, parks, and gyms, just as provisions are made for schools, for there is considerable reason to believe that these inducements to physical health and well-being, as well as emotional health, stimulation, and motivation can be just as important as a classroom and the teacher provided there.

Homeostasis and the Role of Regularity of Habits on Brain Function and Behavior

As Lindsley (1957) pointed out in his chapter on "Psychophysiology and Motivation" in the Nebraska Symposium on Motivation, Claude Bernard Cannon, Child, and others, have stressed the nature of the physiological state and its balancing and equilibrating mechanisms, and from such considerations there is a basis for developing some fundamental ideas about motivation. Starting with ideas or concepts such as homeostasis and the balancing of cellular with extracellular chemistry, the further extension of such concepts to tissues and systems of organs in the body, leads one to a concept of the integrated organism, with its dominating brain and central nervous system and its autonomic nervous system extension, as well as the endocrine system, which by means of circulating fluids, secretion, etc., manages very precisely the economy of the physiological state of the organism. There can be no internal homeostasis without organism-environment interaction and a broader form of homestasis, i.e., as one of the examples mentioned above, sensory and motor systems require stimulation and activation, which only comes by way of action and reaction to the external environment as well as the internal environment, about which relatively few of the mechanisms are known. Only recently Chernigovskiy's book (1960; English translation, 1967) entitled *Interocepters* has provided us with much more insight concerning this internal environment of specialized receptors and their complicated systems of checks and balances. Furthermore, he has introduced us, as had Pavlov before him, to the potentialities of conditioning of internal bodily mechanisms and physiological states. It is through such a channel in particular that one finds a basis for the fact that nearly all men have a common physiology and biochemistry, except where this has been so conditioned by years of privation, emotional anxiety and excitement, or emotional stolidity and bareness, or a host of other physical, social and emotional, and nutritional needs or deprivations, that it operates either exceedingly irregularly, or in unchanging rigidity unprepared for emergencies, or with unusual cyclic manifestations, any of which may be detrimental.

It has been my observation in working with many behavior problem children that autonomic instability is an important characteristic which seems to underlie a host of symptoms. Behavior problem children may seem, and may actually be, normal much of the time, but under certain exigencies, or under regimens running counter to a sensitive conditioning apparatus, something sets them into gyrations in which their behavior conflicts with the home, the school, or the community. Their instability is reflected not only in the way their autonomic system functions, but also in the way their central nervous system functions, and that, in turn, is apt to affect the endocrine system, which may close a vicious circle. In a considerable number of behavior problem children there are apt to be not only unstable and poorly regulated, if not abnormally synchronized, brain waves, but marked reactions of their EEG to physiological or psychological stress such as hyperventilation, breathing low oxygen mixture, low or marginal blood sugar levels, etc., physiologically, and emotional arousal or passivity, moodiness due to lack of affection and attention, etc., psychologically. Some of these states or attitudes appear to have been or longstanding duration, undoubtedly conditioned from early childhood. There are indications that the process can work two ways: visceral disturbances and autonomic instability may become emotionally and intellectually upsetting, and in turn, brain and psychological instability often seems to give rise to somatic symptoms and distress. Drugs which sometimes relieve symptoms, often do nothing by way of modification of what seems to be the underlying physiologically or psychologically conditioned background factors upon which the symptoms develop. In fact, the symptoms often seem to be very flexible, like a baloon bulging out in one place which, when suppressed, will bulge in another. It also appears that children from perfectly satisfactory home and community environments may be endowed with instabilities of the type mentioned, but nevertheless function reasonably normally under the influence of a favorable environment. Quite possibly, as seems the case, those from unfortunate home or community environments, even though resistant to conditioning in the home or community environment, but endowed with certain neural instabilities, may succumb to the frustrations of their situation more readily. Certainly it is true that the siblings of a large family living in an unfavorable environment—economically, nutritionally, socially, and emotionally—do not all succumb to the environment; apparently those with weaker neural systems and genetic constitutions are most susceptible for one reason or another. A unique study by A. F. Ax and J. Bamford (Validation of a Psychophysiological Test of Aptitude For Learning Social Motives. *Psychophysiology,* 1968, 5: 316–332) has demonstrated that measures of autonomic nervous system dysfunctioning are highly predictive of motivational potential for job training which suggests that certain psychophysiological characteristics appear related to learning failures and motivational deficiencies. However, it is risky to make and generalizations except to inspire an attack of magnitude and force upon this vastly important area of developmental adjustment for optimal human effectiveness in adult society.

PART II: NUTRITION IN MATERNAL HEALTH AND INFANT GROWTH

Inadequate food, both in quantity and in quality, represents only the most obvious and dramatic of the causes of low survival rates and poor growth performance in the economically and culturally deprived members of the human populations of the world. Chronic starvation is found in its most extensive form on the continents of Africa and Asia; however, the condition exists among certain groups throughout the world. Statistics on infant mortality reflect wide variations among different cultures, but even the wealthy nations include individuals and classes within their populations who are not adequately nourished. A 2-day interaction between infectious diseases and nutrition operates not only directly in the infant but also during fetal development when the mother is undernourished. Furthermore, there is direct evidence that the infections common in the tropical nations contribute to protein-calorie deficiency even where otherwise an adequate amount of protein would be available in the diet (Platt and Heard, 1965). Sickness or chronic infection may change food requirements or disturb assimilation. The extremely important contribution of protein constituents in the diet of surviving infants was made more dramatic when recent evidence demonstrated that even under close to normal body growth rates, as measured by physical standards, there was an adverse effect on growth of the nervous system and its functioning. Thus, the development of the nervous system may prove to be a most sensitive indicator of less than optimum protein in the diet. Recent work on neural metabolism leads to an appreciation of this nutritional requirement far beyond that formerly acknowledged by scientists working a decade or more ago and relying only on external growth measurements.

The effects of maternal undernutrition and those of genetic factors are difficult to separate in disadvantaged populations. Since consequences may be similar and are exhibited even in fetal death, there is often no way to separate these factors in the individual case. Human population and biostatitstical studies must be conducted in order for scientists to understand the subtle interactions of genetic endowment and nutrition within, and between, the larger genetic pools of any given geographical or socioeconomic group. However, where particular syndromes have been isolated and related to identifiable gene abnormalities, answers to some questions are already available.

Between the healthiest members of our growing population and those who die during infancy is a group often identified under the concept of "failure to thrive." This condition is well recognized by pediatricians from signs of malnutrition and growth failure despite the presence of adequate food. Developmental retardation in this grey area has been variously estimated as being most frequent in advanced societies where institutional care is necessitated during the early years of development or in disadvantaged subcultures wherein inadequate mothering is commonplace. Responsibility for these conditions has been attributed to separation from the mother, a monotonous sensory environment, the regimentation of hospital or institutional routines, harsh and authoritarian relationships between child and adult, and abnormal interpersonal relationships within a given family. Consequences for the child may include retarded physical growth, emotional disturbance and social maladjustment, and the retarded development of intellectual capacities. All of these consequences may occur together in the same individual. Powell et al. (1967a, 1967b), have reported severe growth retardation, retarded mental development, and gross emotional disturbance in children with excessive food intake (polyphagia). This clinical syndrome of pseudoidiopathic hypopituitarism was found to be reversible by removing the children from their home, thereby demonstrating the profound influence of psychosocial factors upon neuroendocrine functions and the utilization of available food products, with adverse conditions resulting in malnutrition and arrested growth development both physically and mentally.

Widdowson (1951) provided one of the few quantitative and well-controlled studies of the relation between psychological factors and physical growth. Working with sizable groups of children from 4 to 14 years of age in two German orphanages after the end of World War II, he compared height and weight increases during 6 months when official rations were equated in both institutions. Average gain was nearly three times as large in one institution as in the other. When the supervisor in charge of the institution showing the poorer weight gain was transferred to the other institution, and even in the face of provisions for additional food beyond that maintained in the first institution, there was a complete reversal in growth gains. The investigator was fully satisfied that the stern and forbidding disciplinarian, who ran her institution by instilling fear in the children, contributed the differential effect on growth. Growth failure and specific measures of social and emotional adjustment have also been closely correlated in another institutional setting, where children ranged from 6 to 13 years of age (Fried and Mayer, 1948).

If it is granted that maternal deprivation, for one reason or another, may be responsible for poor development of physical and behavioral capacities, other forms of deprivation must also be taken into consideration. Monotony in the physical environment is often implicated. Perceptual deprivation and maternal deprivation are not always separated. A critical review by Casler (1961) concludes that when there is little inducement to sensory exploration of the environment, one may expect poor growth and retarded mental development. The biological effects of sensory deprivation will be more fully reviewed in a later section of this report.

Protein-Calorie Deficiency Disease

Poor nutritional support for infant development often begins in the diet of the motor during pregnancy and even in the weeks or years before. Sufficient caloric intake is not enough. The concept of protein-calorie deficiency diseases has become an important one in the field of nutrition. A major unknown, but a problem of tremendous magnitude in certain parts of the world, is a moderate form of protein-calorie malnutrition. As recently evaluated: "from the Public Health point of view, these children are the greatest problem in the world today" (Freedom from Hunger Campaign, 1963). Countries in which conditions called "Kwashiorkor" and "Marasmus" have been described and found to be of highly significant proportions include the Gold Coast of Africa, Trinidad, several countries of Central America, and Brazil, to name only a few. In southern India, it is estimated that 360,000 children, or approximately 3 percent of the child population under 5 years of age, suffer from these forms of malnutrition. These conditions are generally recognized during late breast feeding and in early postweaning ages. Kwashiorkor includes pathological changes in the liver, such as fatty infiltration, fibrosis, and necrosis. There is peevishness and mental apathy. Gastrointestinal complaints are frequent. Mortality is heavy among this population if it is not treated properly. When the condition is accompanied by parasites, a very severe anemia develops.

In a study of 1,360 East African children (Mackay, 1952), the development of a standard skeletal age index was a prime objective. Centers of ossification appeared in the same order as in the white populations of the Western World. However, maturation was 1½ to 2 years retarded by camparison with American children. Whether this delay was a consequence of protein-calorie malnutrition or some other form of retardation is not clear from the data. It should be pointed out, however, that delay of ossification is one feature of the "failure to thrive syndrome.

Among effects of nutritional shortage that are considered established but yet poorly understood by the WHO expert committee on *Nutrition in Pregnancy and Lactation*, the following are considered to be directly related to nutritional factors: premature birth, low birth weight, and fetal and neonatal mortality. In the United States, the possible complications of ethnic (and hence genetic) factors confounded with socioeconomic disadvantages, have made the study of material health and nutrition difficult (Illsley, 1967). Studies of white populations in Scotland and in Denmark escape this confounding, at least at part. One such study in Aberdeen (Thomson and Billewicz, 1963) reports that mothers with poor or very poor health and physique showed rates of prematurity, Caesarian section, and perinatal death two or more times higher than did mothers with very good health and physique. This was in general agreement with data from Copenhagen. Based on these and other analyses, Illsley (1967, p. 103) concludes: "Relationships between maternal stature and reproductive performance would therefore indicate the impact of nutritional and health status over the prior lifetime of the patient."

Recent experimental studies on animals provide examples of how more may be learned about qualitative dietary requirements during the prenatal and perinatal periods (Platt and Stewart, 1968). Lee and Chow (1965) demonstrated that progeny of rats maintained with a dietary restriction of 50 percent during pregnancy and lactation were stunned permanently in their physical growth. This held true in spite of free access to all foods desired following weaning. The result of further analysis of the metabolism of these offspring indicated that nitrogen utilization was poor. More nitrogen was excreted in their urine and the distribution among nitrogen-containing components was abnormal. Another recent animal study (Platt, Barrett, and Christie, in press) provided evidence that oxygen utilization of ova during early cleavage was significantly retarded in animals on a low-protein diet.

The phenomenon of abnormally early glucose tolerance in animals raised on low-protein diet or born of mothers on low-protein diet is of great interest. Heard and Turner (1967) discovered this "precocity" in dog puppies, but measures of later development demonstrated a retardation in later growth. These findings may relate to those of Geber and Dean (1957), who reported precocity in African newly born babies as compared with European children. The high activity and postural skills during the early months of life may relate to the ability to utilize glucose. Disadvantaged populations of America have also been found to show a precocious postural development (Pasamanick, 1946), but at what expense to later mental development is not yet known.

There are now at least a half dozen animal studies that clearly demonstrate retarded learning capacity in animals that have been maintained on a low-protein diet. Brain function is significantly impaired by early malnutrition (Mourek et al. 1967) to the extent that there is a reduction in the capacity to process information. A study of dietary protein appears to confine some effects to the brain (Rajalakshmi et al. 1965). Retarded learning and lower amino acid content of brain occurred even when liver and eyeball measures remained normal. Such differential effects should receive further study in relation to dietary components.

Research is badly needed to decide whether a self-selected diet, possibly too high in carbohydrate calories, may not infrequently result in protein deficiencies. Habitual maintenance of young children on diets that are heavy in the carbohydrates may be a problem not uncommon in the wealthiest of nations. The complex question of protein-carbohydrate interactions is not well understood. A virtually complete unknown is the possible effect of the self-selected diet of an infant whose mother may have either through custom or through necessity been living on diets with sufficient calories but poorly balanced from a nutritional point of view.

Perinatal Complications and the Environment of the Newborn

When anoxia or other birth injuries occur, the outcome of the first 2 years of development may hinge in part on the quality of the home environment. A combination of poor environment and perinatal stress is reported (Werner et al., 1967) as producing subnormality in physical, social, and intellectual development. It was found that the greater the severity of perinatal complications, the greater were the benefits of a good early environment. There is a great need for research to pinpoint causal relations.

PART III: GENETIC CONTRIBUTIONS TO BIOLOGICAL AND BEHAVIORAL DEVELOPMENT

Introduction

Since 1950, the field of behavioral genetics has emerged from a background of widely scattered earlier work of an interdisciplinary nature, and from an older genetic determinism. A theoretical approach now is seen to provide valid generalizations only when genotype is considered to operate *with* environmental factors to produce phenotype or observed behavior characteristics. Combined with newer quantitative genetics, this approach offers vastly improved understanding of individual differences in behavior.

Throughout the organism's development, and indeed throughout its entire lifespan, genetic influence is being expressed. The genetic material (deoxyribonucleic acid or DNA) sends its message in a form of ribonucleic acid (RNA) into the cytoplasm of cells. Copies of each form of RNA determine specificity of enzymes. These enzymes in turn are responsible for physiological functioning. Characteristics of the central nervous system, sensory systems, and other systems such as the effectors and the endocrines are influenced by nutritional and other environmental biochemical factor. Where the resulting interaction of the environment is favorable, the organism survives and reproduces in similar kind. Under less favorable conditions, the organisms perished. We cannot appreciate too strongly the contributions of our biological heritage toward the establishment of those genetic potentials for adaptation in a real environment, and to the profoundly complex human capacity to grow up under conditions prevalent on this earth. While most of the science of genetics has been developed by the study of infrahuman forms, both plant and animal, the present evaluation of current knowledge will concentrate on what can be applied to human biology and human behavior.

Environmental Variation and Variation in the Genotype

A fundamental principle pervading all recent data on effects of environment on the individual is that of variation in *optimum environments.* Simply stated, this means that the best environment for a given individual may be importantly different from that for another individual because of innate endowments. Illustrations of biochemical differences are numerous (Williams, 1956). The so-called normal population varies in its response to specific reward systems. Food preferences vary. Preferred temperature varies. Dietary requirements are not identical. Tolerance for toxic agents varies rather widely. Some individuals are unable to utilize or metabolize certain of the essential amino acids. The rather dramatic example of this occurs in individuals possessing a deficiency of the liver enzyme, phenylalanine hydroxylase. The essential amino acid, phenylalanine, is not converted into tyrosine. This failure proves detrimental to the developing nervous system. The intelligence quotient of children suffering from this genetic malady is typically below 50. Altering the diet is to an unknown degree partially successful in reducing the effects of this biochemical deficiency. Less dramatic and not always as clear are some 30 other conditions in which urine testing may uncover peculiar capacities for metabolizing amino acids (see Efron and Ampola, 1967). Further research is urgently needed in order to advance our knowledge and potential pediatric control over these conditions.

Certain of our measurable behavioral traits are proving to respond to environmental variables to a high degree, while others respond only when there are appropriate genetic supports. In recent studies of intellectual functions, the degree of genetic determination appears to be quite high or quite low depending upon which function is being considered. Vandenberg (1968) reports a strong genetic component as being present in number and fluency traits as well as in space and verbal conceptualization. Reasoning and memory on the other hand appear to have little or no genetic component. There is good evidence that the hereditary component is strong in such personality traits as emotionality, activity level, and extroversion-introversion (Vandenberg, 1967).

What of the important question concerning a genetic basis for the development of psychoses? Most work in this area has focused on the study of schizophrenia. In addition to the classical study of Kallmann (1946) in the United States of America and a study by Slater of populations in the United Kingdom, there have been five reports within the past 8 years from different European countries and Japan. The results of these, conducted by contrasting monozygotic and dizygotic twins, clearly support a genetic contribution toward susceptibility to schizophrenia. The reader is referred to an important review by Shields et al. (1967). A highly significant recent study of schizophrenic background is that of Heston (1966). With children who were adopted within 3 days of birth, he found no cases of schizophrenia in a controlled population. In a population of 47 children born of schizophrenic mothers, there were five who became schizophrenic, and nearly half of the 47 developed a significant "psychosocial disability."

The inheritance pattern of schizophrenia is clearly too complex to be that of a simple Mendelian or single gene theoretical system. A quantitative inheritance model accounts well for the observations. It also helps to account for the frequency in the general population, which is relatively high. Further research is needed to find out whether, indeed, the unaffected siblings of schizophrenics possess some advantage in modern reproductive and survival requirements. Huxley et al. (1964), have discussed the statistical evidence and made suggestions about possible relationships between the biological background and the incidence of schizophrenia in the modern human population.

The Problem of Inbreeding in Human Populations

Studies of the offspring of siblings or cousins have provided some evidence regarding the age-old question of inbreeding as it applies in human populations. Theoretically, there is danger of deleterious effects due to the higher frequency of bringing together possible deleterious recessive alleles. This finding seem to be confirmed with regard to the IQ and some other measures of physical health (Schull and Neel, 1965; Adams and Neel, 1967.) Whether these findings support the opposite extreme of the continuum is still an open question. Does widely divergent variability in the genetic background of an individual improve his chances for being a superior specimen?

Race and Psychosocial Deprivation

There has been no clearly established relationship between race and behavioral traits that does not involve unfounded assumptions regarding the comparability of their environmental support. Data are inadequate to prove this broad generalization either positively or negatively. Such a highly complex cluster of traits which go by the name of "intelligence" must be a consequence of interactions between many different gene combinations and many patterns of environmental conditions. Clear thinking in this area will not result from a global attack such as has too often been formulated with a view to answering the question on its broadest terms.

Whereas studies of racial groups have provided apparent mean differences in scores on many standardized tests, no such studies have escaped great difficulty in interpretation. The difficulties stem from a series of shortcomings such as the following: differences in educational opportunity, differences in nutritional status, selective sampling because of certain social conditions, biases in the construction of tests which nearly always favor one group over another. Problems which have been almost insurmountable and yet ignored by too many in this area of research are treated in two recent review articles (Spuhler and Lindzey, 1967; Mead et al., 1968).

Animal studies clearly point to behavior differences based on genetic background for different selectively bred populations. McClearn and Meredith (1966) have reviewed much of this excellent research. Search for underlying and physiological mechanisms that mediate these differences is progressing slowly but encouragingly. One may generalize from such findings that relatively isolated human populations will possess traits in different profiles or amounts when research is able to investigate clearly these kinds of differences.

Chromosomal Anomalies in Man

Within the past few years exciting implications for behavioral genetics have arisen through development of techniques for studying anomalies of individual chromosomes. In 1959, the etiology of Down's syndrome (formerly called mongolism) was found by two groups of workers to have a chromosomal correlate (Lejeune et al., 1959; Jacobs et al., 1959). Excess genetic material in the form of an extra chromosome at position No. 21 proved to be an invariable accompaniment of this form of mental retardation.

Chromosome pair No. 5 has been found in some individuals to be short at one end of one member of the pair. The result is a severe mental retardation. The somewhat less consistent correlation between Klinefelter's syndrome and abnormality in the XY chromosome pair leaves this form of mental retardation far short of explanation.

A number of reports recently have made public knowledge of the fact that individuals with an extra Y component added to the XY pair possess tendencies toward aggressive and violent behavior, often beginning in childhood. Also, these individuals are typically of greater than average height. Weiner (1968) has recently reported a study of such individuals in Australia. Sex chromosome anomalies and their accompanying symptoms and conditions have been reviewed recently by Sourt Brown (1967).

Although the etiology of such chromosomal anomalies and their extensive variation are as yet poorly understood, the problem is related clearly to psychosocial deprivation, inasmuch as infectious agents of various kinds have not infrequently been implicated. For example, within a short period of time in 1954, seven children were born with Down's syndrome, four of whom lived within one-quarter of a mile of each other and were born within the same week. Subsequent studies have verified this clustering effect in some instances, but, in others, have not been able to confirm such a dramatic co-occurrence (for a survey, see Collman and Stoller, 1960).

Suggestions for Future Research

Genetic engineering would appear at the present time to be premature. It should not be ruled out for the near future. Some highly selective limitations on reproduction would appear to be feasible on the basis of current information. On a voluntary basis, this clearly goes on, hopefully under careful medical guidance.

The time appears ripe for a series of careful studies in which quantitative genetic principles are combined with multivariate research models of psychology. Developmental behavioral genetics of man would be importantly advanced by any carefully executed and well-designed research. Not enough activity in this area has appeared in the biological or psychological research programs. Studies of physiological mechanisms should be encouraged wherever a clear genetic base has been demonstrated. This work would involve research with animals as well as with man.

In studies on human beings, the current trend toward investigation of subcomponents of personality and cognitive traits should be promoted. Sensory and perceptual processes in man have been sadly neglected in studies of family trends or other correlational approaches. Implications for such information in educational practice would have widespread significance. Within the many categories of mental retardation, distinct syndromes should be further identified. Strong efforts should also be made to utilize genetic criteria along with biochemical and behavioral criteria to distinguish subcategories within a broader classification of schizophrenia. The entire question of differential fertility rates among exceptional populations and among those of high or low educational achievement should be investigated. Fears have been expressed that the more able are self-selecting a reduced rate of reproduction. Evidence is far from adequate on this point. A very encouraging proportion of children among disadvantaged groups have average or superior associative learning ability and short-term memory. We need to know much more about their potential for certain abstract cognitive performance and specialized perceptual abilities. (See supporting paper for chapter II by A. Jensen.)

PART IV: NEUROENDOCRINE MECHANISMS IN STIMULATION OF MOTHER AND INFANT

Background Information Concerning Regulation of Growth and of Response to Stress by Endocrines

It may be safely assumed that pituitary regulation of growth is a well-established principle. Specific neural systems interact with hormone regulation in the growth of the various organs that differ between the sexes. Interaction works also in the direction of the sensitization of neural mechanisms by hormone action. Similar levels of hormone circulating in the blood stream of male or female organisms produce markedly different degrees of, if not qualitatively different, responses. Thus, the brain of the female is markedly more sensitive to estrogen and progesterone.

There are both sex differences and individual differences in the response of plasma steroids when organisms are subjected to various stress conditions. Responses within a given individual are highly consistent. Very important recent studies have demonstrated that, among other factors, events which occur during ontogeny play a significant role in setting the level of response that will be observed in a given individual. Recovery rates from stressful hormonal secretions are part of the individual pattern. Animal experimentation has shown that when environmental variation is minimized, the steriod response tends to be slow acting and relatively less than in animals receiving more stimulation. The latter group, in spite of its larger amplitude of response, recovers more quickly toward the original baseline level. Furthermore, it is true that early stimulated animals give a reduced steroid response when exposed to novel stimuli (Levine et al., 1967). Not only is this physiological response to stress a function of early environmental factors, but the emotional behavior as exhibited later in development and probably even in adult life is in part a response to this factor.

Mother-Infant Interactions

As a determinant of emotional behavior, it has long been a part of psychiatric and psychological theory that a mother's emotionality will have an effect on her infant. The converse is also a reasonable possibility, if not quite as obvious. In either case the perpetuation of certain emotional traits may be expected to continue for more than one generation as a consequence of environmental factors. Where psychosocial deprivation results in strong stimulation, or possibly the opposite—excessive monotony—we may expect an effect on behavior of offspring. Clinical evidence may support this general principle, but it is very difficult to accept as definitive. So again, evidence from animal studies must be seriously considered and greatly refined in the future, if science is to understand and offer sound principles of action. Experiments on animals done by Denenberg and Whimbey (1963) and by Levine (1967) have demonstrated that mothers whose own experience as infants provided a more rapid recovery from the stress response, had offspring which were heavier at weaning and which also showed a reduced steroid response to novel stimulation.

A maternal factor which also works upon the infant occurs postnatally in another experimental demonstration. In mothers given electric shock stress while nursing it was demonstrated that offspring at 24 days—or 4 days after weaning—showed significantly higher levels of corticosteroid when novel stimuli were presented as compared to controls whose mothers were not subjected to the stress stimulation. Parenthetically, it should be stated that there is no effort at this point to imply a more successful or less successful later adjustment in these different groups.

Another body of data indicates further that a lactating female and her offspring constitute an interacting system that is buffered against extreme responses to stress. Levine (1968 manuscript submitted to NICHD) has shown that under various types of stressful stimulation, including ether anethesia, and exposure to novel stimulation as well as electric shock, the plasma corticosterone levels are reduced by more than 50 percent in the lactating females. This is only one of several indications that the maternal organism is less susceptible to variation in homeostatic and metabolic functions during the period of lactation.

Direct Stimulation of the Infant and Later Development

Morton et al. (1963), demonstrated that handling during infancy, which as we have seen produces a change in ACTH response, also advances the onset of puberty. Presumably this effect is mediated by the sex and thyroid harmones. Other sources of evidence show that the hormonal response of the infant organism may be a function of prior exposure to hormone levels in the fetal circulation. It has long been known that certain toxins in the mother have effects on the infant. As demonstrated at the Fels Research Foundation, there are accelerating effects on fetal heart rate from the mother who has taken a series of puffs on a cigarette. The actual physiological mediation for these effects at the human level are unknown. Deleterious consequences, if any, have not been identified. In addition, disease toxins are known to interrupt organ growth at critical periods.

Growth is advanced by exercise, food intake, and by appropriate levels of physical and mental activity. Recent work implicates growth hormone as a mediating mechanism in each of these factors (Knobil and Hotchkiss, 1964; Root, 1965; Grumbach, 1966). Perhaps this set of findings gives psychobiology further insight regarding the underlying antecedents to the "secular trend" toward earlier maturation and larger adult stature in modern man (Clements, 1953; Greulich, 1957; Damon, 1965).

Suggestions for Future Research

It is abundantly clear that neither the animal work nor studies on human infants have thus far given a very clear explanation for mechanisms of neuroendocrine or behavioral changes that are measurable during fetal and developmental time periods. Critical period hypothese are generally accepted but have limited and inadequate foundation. That some of the effects persist into later life is also made clear by empirical observation. What is most needed is further work on the physiological mediators and the question or irreversibility of these effects as found in experimental studies. Intervention offers possible avenues of attack on organic and behavioral disabilities that have scarcely begun to receive research attention and badly needs to be encouraged.

PART V: EFFECTS OF SENSORY-PERCEPTUAL DEPRIVATION ON THE STRUCTURE AND FUNCTION OF THE NERVOUS SYSTEM

An impoverished sensory environment results in the arrest of behavioral development, in retarded biological development, and in anatomical and physiological changes in the nervous system. At the other extreme, sensory bombardment produces an overstimulation which in time may result in severe damage to neurons of relay centers and in chronically heightened sensory thresholds. Data already in hand clearly imply an intermediate optimum of stimulation level for development and maintenance of neural elements or behavior, depending upon specific behavioral outcomes used as criteria. Different intensities and qualitative patterns of stimulation care are called for if the organism is expected to perform most discriminatively along specific environmental dimensions.

Research, accomplished primarily in animal studies, clearly indicates that very early in development there are critical or optimal periods during which the environmental demands must occur in order to provide for adequate structural and behavioral development. In studies that demonstrate neuroanatomical changes in consequence of *later* deprivation, a remarkable durability is not unlimited. Deafferentation eventually produces a reduction in number and length of dendritic branches of the cortex. Whether so-called association cortax also becomes involved is not known.

Patterned Light as a Requirement for Visual Functioning

The normal discrimination of visual patterns requires support of more than diffused light experience. Ophthalmologists have long been cognizant of the effect of an occluder over one eye. During childhood, this procedure results in a gradual reduction in visual acuity that becomes highly apparent within 3 or 4 weeks of occlusion. At this point, the effect is not irreversible, but continued occlusion eventually makes recovery of maximum acuity unlikely. In experiments with kittens, Kupfer and Palmer (1964) permitted only diffused light to enter one eye and patterned stimulation to enter the other. Cells of the lateral geniculate body in those layers corresponding to the eye receiving diffused and reduced light were found to be abnormally small. Using electrophysiological recording from single cells, Wiesel and Hubel (1965) found a marked reduction in responsiveness in the visual cortex to stimulation from visual edges as elicited with patterns presented to the previously occluded eye. Whereas in the cat, any *anatomical* change of the cortex was difficult to demonstrate, Fifkova (1967) has been able to measure such changes in an animal (rat) whose visual pathways cross almost completely at the optic chiasm. A highly significant finding from a theoretical point of view is that bilateral presentation of diffused light permits a somewhat less retarded rate of development than has been found in unilateral deprivation. This result implies an interdependence of stimulation effects in the two eyes. It is a result obtained with newborn kittens and urgently needs verification and extension at the primate level. Only then will its significance for human visual perception be understood.

When the chimpanzee (Chow and Nissen, 1955) or the cat (Riesen and Aarons, 1959) have been raised from birth receiving only diffused light, there is no impairment of the capacity for discriminating large differences in light intensity. Form vision, on the other hand, is severely impaired. If only one eye has experienced the stimulus deprivation, this impairment is restricted to input from that one eye. A cat that has had early complex visual stimulation, on the other hand, may be kept for months in total darkness and maintain its capacity for difficult form and movement discriminations (Riesen, 1965).

Neural Metabolism Under Stimulation Deprivation

Only in the past two decades has there been much progress in the study of neuroanatomical and biochemical correlates of sensory deprivation. In Sweden, Russia, and the United States, various approaches to this difficult but highly important research area are being pursued. In the middle of the century, about 1950, there was clear evidence that protein metabolism, as measured by ribonucleic acid (RNA) concentration in nerve cells, is highly responsive to change in levels of neural activity. More recent work has been successful in identifying a few of the details of the neuro-biochemistry related to stimulation of neural activity. Rose (1967) found that triteated lysine is incorporated at the cortex at a significantly increased rate three hours after initial light stimulation in the newborn animal. Subsequently, there is a fall below initial levels when measurements continue to 15 and 24 hours of continuous light stimulation. Control levels in the liver remain stable over this period of 24 hours or more. Other work has demonstrated increased neural metabolism as a result of novel stimulation. Repetitive stimulation, such that novelty is no longer a feature of the environment, permits the metabolic activity in cortex to return to prestimulus levels.

Visual, auditory, olfactory, and vestibular sensory systems all share a common response to an optimum level of stimulation. Cell diameters increase, RNA concentration increases, and in some instances—where measurements have been taken—there is a change in thickness and weight of the layers of retina or cortex. What of centers that participate in regulating the internal environment? Further work on these is greatly needed to advance understanding of the development of neuroendocrine mechanisms. Centers of the limbic and autonomic systems (and somato-sensory) must be studied if we are to understand better the development of individual characteristics of response, as these are affected by environmental contingencies. Salt metabolism has been studied and the results of this one experiment imply widespread involvement of the thalamic, and certainly, by extension of the logic, systems of the limbic structures. Edstrom and Eichner (1958) provided a moderately increased chronic level of stimulation to the supraoptic nucleus by putting salt in the drinking water of experimental rats over a period of 2 months. Volumes of nerve cells were increased over control levels. A 40-percent increase in nucleolar RNA and a cytoplasmic increase of 80 percent in RNA content provide evidence that neuronal activity was accompanied by growth increases in the cells involved. These effects are not confined to early developmental periods. Both young and adult animals were found to show increased weights of cortical tissue in the visual area when environmental complexity was increased over a period of several weeks. This change was associated with a significant increase in total AChE activity (Rosenzweig et al., 1964).

Changes in RNA concentration or in some measure of enzyme utilization show prompt effects of increased stimulation levels (Riesen, 1966). With prolonged differential rates of stimulation, protein levels change. Sources of amino acids and of various RNA's have only tentatively been identified. Intensive research in this area would advance the field of neurochemistry dramatically. Glial cells may be the source from which nerve cells obtain their immediate supply (Hyden, 1962). On the other hand, Shabadash (1964) believed that he had observed an interchange of nucleoproteins between mitochondria, endoplasmic reticulum, and the nucleolus. Ultimately, such changes within the neuron must be supported from extra-cellular sources. Mechanisms of protein metabolism appear to be shared in learning and in sensory deprivation. There must be a difference between demands of novel stimulus combinations and demands from familiar environmental events. Further experiments using neurochemical and ultrastructural investigatory techniques are essential to progress in this neuropsychological area of research.

Sensory Stimulation Required for the Development of Fine Structures in the Nervous System

Neurons of the visual cortex have been compared for counts of dendritic spines in dark and light reared mice (Valverde, 1967) and rabbits (Globus and Scheibel, 1967). Twenty percent fewer dendritic spines were found in the mice after dark rearing. With the rabbits, the report was a shrunken appearance to a large number of the spines. At a grosser level, a recent paper (Coleman and Riesen, 1968) describes a 20-percent reduction in dendrite growth for stellate cells of light-deprived cats, as found in layer IV of visual cortex and absent in control layers. Cells of posterior cingulate gyrus were differentially affected also. These studies are only in their early stages, with most parameters still unexplored.

Synaptic growth is in urgent need of investigation. Cragg (1967) has pioneered electron microscopic studies by measuring synaptic diameters in the visual cortex of rats reared to three weeks in darkness. Different groups of animals were exposed to light for periods of 3 hours up to 10 weeks. Differences in synaptic diameters were significant for all groups with 3 hours or more in light provided that they were permitted to live 48 hours or more following the shorter exposures.

Early Social Deprivation

Social isolation, viewed as a qualitatively defined example of sensory deprivation, results in behavioral inadequacies and motor stereotypes that have been well described but not so well explained. Physiological correlates have been studied exclusively from the endocrinological point of entry, and need to be investigated in terms of neural correlates. Harlow et al. (1963), Mason and Sponholz (1963), Mason (1967), Mason et al. (1968), Menzel, Davenport, and Rogers (1963), all describe for higher nonhuman primates the stereotypes, the emotional peculiarities, and the maladaptive social behaviors of the early social isolates.

Recent work by Mason (1967), which compared infants reared with moving mother surrogates against those reared only on nonmoving surrogates, provides dramatic support for kinesthetic and somesthetic afference as a factor in preventing the development of movement stereotypes and impaired socialization, as assessed at 10 months of age.

Although Harlow (1964) has maintained a clear distinction between social and sensory deprivation, where he states: "The most extreme deprivation condition we have studied is total social isolation (not sensory isolation, only social isolation)" (p. 154), Prescott (1967), in a review of the animal maternal-social deprivation literature, concluded that maternal-social deprivation constitutes a special case of sensory deprivation, specifically somato-sensory deprivation which includes somethetic and kinesthetic components. Further, Prescott (1967) proposed that the behavioral pathologies associated with maternal-social deprivation, which include hyperexcitability, increased violence and aggression, impaired socialization and heterosexual function, movement stereotypes and apathy with autistic forms of behavior, can be attributed specifically to neurostructural, neurochemical, and neuroelectrical deficits in the somato-sensory system and allied central nervous system structures associated with the mediation and regulation of affective-motor processes. The cerebellum, limbic system, frontal cortex, and reticular activating system were specifically implicated as neurofunctional systems to account for the behavioral pathologies associated with early somato-sensory deprivation.

The maternal-social deprivation problem was not originally conceptualized as a psychobiological problem involving a specific form of sensory deprivation, and furthermore, biological studies of the quality and quantity associated with visual sensory deprivation have not been conducted with respect to the somato-sensory system.

Essman (1968), however, has obtained the first neurochemical data on the cerebellum and limbic system in isolation-reared and group-reared mice where neural deficits for isolation were confirmed. In summary, mice were reared under isolation and group housing conditions for 28 days commencing at 21, 23, and 32 days of age. The animals were then sacrificed, and the DNA concentration in cerebellum, limbic system, and cortex was analyzed. In brief, it was found that the percent loss of DNA in the isolation reared animals starting at 21, 23, and 32 days was 38 percent, 24 percent, and 7 percent, respectively, for the cerebellum; 61 percent, 41 percent, and 35 percent, for the limbic system; and 0 percent, 25 percent, and 103 percent, for the whole cortex. Since DNA is considered constant per unit cell, the measurement of DNA in neural tissue may be used as measure of cell number or quantity. These results suggest that isolation (and presumably sensory deprivation of somato-sensory nature) can affect older structures of the nervous system early in life, but less so after a certain degree of maturation; in the case of the cortex, which is slow to develop, the effect is delayed.

The above formulations and supporting data provide a bridge between the social and biological disciplines through the phenomena of sensory experience and its deprivation during ontogenetic development. The possibility of identifying specific neural structures in the specification of a biological predisposition to violent-aggressive behavior and impaired socialization, as a consequence of lack of early sensory-social experience, remains to be validated by further research and suggests another exciting frontier in the behavioral biological sciences which has long range and substantive implications for human development and society.

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Chapter V

TOWARD A RESEARCH POLICY FOR PSYCHOSOCIAL DEPRIVATION

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Chapter V

TOWARD A RESEARCH POLICY FOR PSYCHOSOCIAL DEPRIVATION

Sigmund Dragastin

INTRODUCTION

This report on psychosocial deprivation grew naturally out of NICHD's mandate to study the total process of normal human development. While it was recognized that psychosocial deprivaton was simply an organizing rubric rather than a manageable scientific term, it was also recognized that the processes involved in human development (and in deprivation as it bears on human development) transcend the conceptual arsenal of any one discipline or any one point of view. Just as the processes of human development involve biological, psychological, sociological and cultural factors and the interaction of all of these, so too, deprivation can be considered from the biological, psychological, sociological and cultural points of view, and it involves the interaction of all these factors over time.

In order to grasp the problem at all, however, deprivation was considered in the previous chapters under four headings: the biological substrates of deprivation; deprivation and cognitive development; deprivation and socio-emotional development; and social structure and socialization as they bear on deprivation. Within these categories, the authors of the previous chapters have achieved a remarkable synthesis.

This fifth chapter grew out of 2 days of discussion in which research-oriented social and behavioral scientists and action and policy-oriented social scientists discussed the implications of the previously mentioned state-of-the-art papers. The topic of discussion was the following: given the necessity for social intervention and action programs, what are the research priorities in deprivation that need to be gotten underway as soon as possible; and given the current corpus of knowledge about deprivation, what are the immediate implications of this body of knowledge for social intervention and action programs.

It should be noted that this chapter is directed to the informed formulator of *research policy*, however, rather than to the scientific investigator or the social practitioner as such.

THE INTERFACE BETWEEN RESEARCH POLICY AND SOCIAL ACTION

The most salient, overall judgment which emerges from the previous chapters of this document is that we already know a great deal about the variables and the processes involved in psychosocial deprivation and that we need to know a great deal more. It is not as if we were completely ignorant on the subject nor as if we had all the answers. We are, so to speak, on middle ground in understanding the phenomena associated with psychosocial deprivation.

The usefulness of the first four chapters, for our purposes, is that they provide the necessary framework for looking at deprivation in ways that might easily escape the policymaker or the social practitioner. These chapters provide us with broad perspectives and models within which both research policy and social action programs can be evaluated. These perspectives include, for example, the idea that there is a constellation of casual factors which affect the deprived and that there is a syndrome-like quality in the effects; the idea that these causes and these effects, taken together, account for the downward spiral in which the poor often find themselves; the notion that intervention programs should be designed so as to cut into this spiral at several points simultaneously, and the correlative idea of identifying the points of intervention which would have the greatest pay off. There are also issues in which different theoretical positions emerge. For example, is there a culture of poverty or not? If there is a culture of poverty, that is, if the poor are caught up in a self-sustaining cultural system which is adaptive to the circumstances in which they find themselves but which traps them there, then certain kinds of interventions would be called for. If, on the other hand, the social and psychological correlates of poverty are merely the normal outcomes of social stratification—without the strong notion of a self-sustaining system—then other kinds of interventions should be emphasized. The obvious implication for research policy is that hypotheses designed to test these alternate models should be formulated. One of the best ways, if not the only way, of studying such hypotheses may well be social intervention programs which are properly designed and thoroughly evaluated.

All of this taken together argues persuasively for a new and different kind of cooperation between the pure research scientist and the social practitioner. The research scientist should become more available to the policymaker and the practitioner to identify those variables and processes which have the highest probability of being significant in some particular social problem. The policymaker and the practitioner should make available to the research scientist well-designed and well-implemented interventions the study of which would contribute to basic knowledge. Both the scientist and the practitioner should cooperate in the design and implementation of selected intervention programs. Within this perspective, some broad outlines of research policy were formulated for NICHD.

Since one of the salient aspects of the deprivation phenomenon is its complexity and interrelatedness, the NICHD should continue to support an interdisciplinary confrontation of the problem.

Since we do not yet have the arrangement for a systematic continuity between research knowledge and practice, and since meaningful interventions are as much a matter of creativity and social engineering skill as they are a matter of theory and empirical generalizations, the NICHD should facilitate the interaction between research scientists and social practitioners. These two groups should get together for a joint examination of assumptions and a joint formulation of questions, the research scientists contributing perspectives and insights into what the relevant variables might be and practitioners providing ways in which these variables might be manipulated in the real world. Within this framework, selected intervention programs should be studied in depth in order to contribute to basic knowledge.

Training funds of the NICHD should to some extent be used to bring into existence a class of researchers who are sympathetic to the need for interdisciplinary research and who see meaningful evaluation research as a significant way to broaden basic knowledge in psychosocial deprivation.

The NICHD should assume the responsibility for setting guidelines for evaluation research. Such guidelines would attempt to identify or bring into existence those interventions the study of which would contribute both to basic knowledge and to the development of theory on deprivation. These guidelines would also establish broad norms for such research. Such research should be carried out by competent scientists and disinterested agencies, and it should be concerned with basic issues rather than merely evaluating the immediate impact of intervention programs.

THE NECESSITY FOR AN INTEGRATIVE PERSPECTIVE

Human behavior is a vastly complex phenomenon. The consistencies in human behavior which are the object of scientific study are the outcome of at least several conceptually distinct systems. In the present state of social science theory, it is common to distinguish between culture as a system, social systems as such, and the psychological system of the individual. By social systems, we mean reciprocally related sets of roles within and between small groups, organizations, institutions, etc. The psychological system is conceptualized in terms of cognitive variables, motivational systems, personality terms, etc. The individual is also a biological organism. And the culture is embedded in an ecological base of biological and physical systems.

It is an assumption of social science that while these systems are conceptually distinct, they are also interacting and giving rise to feedback effects. For example, the family and school through the socialization process profoundly affect the personalities of individuals which, over the long run, in turn may affect the family and the school. On the other hand, the family and the school are also responsive to cultural values and they may or may not be in harmony with the culture. But it should be noted that social science generally assumes that the values of a society change much more slowly than either the social systems or the individual personalities. (In the present paper on deprivation, this fact is tacitly acknowledged by the fact that no one is suggesting massive changes in the current values of American Society. Or if such value changes are suggested, no one suggests that they know how to bring such cultural changes about.)

The sheer complexity of these matters causes the nonsocial-scientist to despair of approaching human behavior with enough scientific rigor to describe accurately, much less predict, behavioral outcomes. And yet, human behavior is not random but does show clear consistencies. In fact, correlates of some aspects of deprivation are well enough established that a large number of scientists have been willing to look at human behavior under this rubric with the hope that a more precise understanding of human functioning will emerge and interventions, based on knowledge, can be implemented to help the deprived.

THE DIFFICULTIES OF AN INTEGRATIVE PERSPECTIVE

Understanding deprivation as it is related to human behavior is confounded by problems other than sheer complexity. There are a number of reasons why this is the case. First of all, the ordinary stance of the social or behavioral scientist towards his data is necessarily analytic. He proceeds by taking his data apart variable by variable, and often with ever more precise distinctions. The scientist tends to be rewarded for the sophistication and methodological rigor with which he approaches this analytic task. The influence of the natural sciences on the social sciences in this regard is very great. There can be no doubt that advances in the behavioral and social sciences will continue to be made by just such careful, rigorous research. On the other hand, the very nature of the problems raised by deprivation point to a constellation of factors which cause socially undesirable consequences and a syndromelike constellation in the consequences themselves. Within the phenomenon of deprivation and the consequences of deprivation, one can identify spiral effects, feedback effects, and complex interactions of widely diverse kinds of variables. For this reason, if research is to provide needed policy guidance, the strategies of research into the consequences of deprivation necessitate a more holistic perspective than is commonly found in any one behavioral discipline or among researchers pursuing a single-variable problem. And action programs which attempt to intervene in the deprivation process must be prepared to intervene at many points simultaneously. (For example, breaking the vicious circle of poverty may require more than attention to cognitive development in the immediate preschool years or better job opportunities. It may require both of these and much more besides.)

The second reason deprivation represents such a baffling problem is because there are many unresolved issues both within and between the various behavioral and social science disciplines. These issues often have great importance both for policy decisions and for action programs relating to deprivation. But the needed answers are not available because of the relatively underdeveloped state of the social sciences which can, in some measure, be attributed to inadequate financial support in the past. These unresolved issues exist at both the theoretical and the empirical levels and are the kinds of issues we will be talking about through most of this paper.

The third reason deprivation represents a difficult research problem is to be found in the present state of social science technology and methodology. For example, there seems to be a consistent set of motivational variables which are associated with deprived status. But we have yet to establish the underlying dimensions of motivation and personality or the necessary psychometrics which would allow us to do so. Moreover, the constellation of causal factors associated with deprivation suggests a multivariate mapping of environmental inputs. Such a venture would also give a great deal of attention to identifying priority interactions among those aspects of the environment which bring about socially undesirable consequences. But the metrics for mapping the environment are themselves underdeveloped. Nor is there an abundance of behavioral scientists adequately trained to carry out such a project with great sophistication.

The need for longitudinal studies as one way of understanding the deprivation syndrome was frequently pointed out in the previous chapters. Yet, because of the practical and methodological difficulties in longitudinal studies, that is, in following the same individuals through significant segments of their lives, it is difficult to get them underway.

Some aspects of the deprivation problem would at this stage of knowledge be advanced considerably by exploratory, phenomenological observation. (For example, what does happen to the child between the ages of 1 and 3 and with what consequences for his emotional and cognitive development? What happens to the adult between the ages of 21 and 50?) But such exploratory studies often do not get financed because their proposed data are not hard enough nor do such studies, by and large, command much prestige within their disciplinary fields.

Finally, one might make considerable advances in understanding deprivation by closer study of intervention programs. Such intervention programs should be designed in terms of the most sophisticated knowledge and wisdom concerning the processes involved in deprivation. The design of such programs compels the synthesis of many factors falling in the domain of different disciplines and specialties. Their intensive study, not merely to evaluate overall impact but to throw light on the processes by which the effects of deprivation may be modified, would balance the analytic stress on particular variables that is characteristic of the scientific disciplines. Thus, the study of intervention programs would contribute both to basic knowledge and to its usefulness.

Generally, intervention programs could be significantly strengthened by more adequate conceptualization based on available scientific knowledge and involving as consultants specialists in relevant disciplines. Too often, intervention programs are a response to various political pressures. They tend to be evaluated simply on the basis of their impact. However, every intervention offers the opportunity, if properly designed, for effective collaboration between scientists and practitioners in attempting to modify the effects of deprivation.

LINKAGES IN PSYCHOSOCIAL DEPRIVATION

Through the rest of this chapter we will discuss each of the four topical areas: personality development; learning and performance; social structure and socialization; and biological substrates. In each of the topical areas, we will attempt to identify an overall perspective and priority research needs, the implications of these research needs for research policy, and finally, some guidelines for action and intervention programs.

It should be noted that the NICHD has a special interest in normal growth and development, the mentally retarded, and the aged. Although current social issues make the problems of the urban and rural poor most salient and one's imagination most easily applies the data from the four chapters on deprivation to the urban ghetto or rural slum, the NICHD is concerned with the problems of bio-psychosocial deprivation wherever they occur. The reader must at times use his own imagination to make the necessary applications from the data under discussion to particular groups.

PERSONALITY DEVELOPMENT

Overall Perspective

The chapter on socioemotional development and deprivation indicated a cluster of self-attitudes and personal orientation associated with deprivation: self-esteem, self-confidence, dependence-independence motivation, need for achievement, internal versus external control of reinforcements, etc. While a certain syndromelike quality can probably be found among these variables, it is also evident that what we have is merely an impressionistic integration of a deprivation syndrome without knowing what its dimensional structure is. At this point, we have inadequate conceptual analysis, inadequate instrumentation, and we need to find the underlying dimensions of this syndrome if core dimensions do in fact exist.

Motivation and personality theory as we now have it developed a generation ago in large measure out of a psychoanalytic and early life experience framework with a corresponding emphasis on projective techniques to get at underlying motivations and on adjustment rather than on self-determination and competence as the evaluative ideals. Both this conceptual model and the psychometrics developed from it have been found wanting so that research in personality and motivation have in recent years failed to attract a sufficient number of good researchers into the field. On the other hand, the center of interest in Piaget's encompassing formulations and the special stimulus of sputnik resulted in a burst of interest in cognitive development and learning. Over the last decade, the cognitive side of psychology has made considerable advances and has attracted many of the able, young researchers entering the field of developmental study.

Several things indicate that the time is ripe to return to a major concern with motivation and personality. First, there is a realization that very much of what is measured in learning and performance is as loaded with motivational factors as cognitive ones. Second, there is a reasonable conjecture that significant inroads will be made into the problems of psychosocial deprivation insofar as we learn to utilize motivational factors in people who are disadvantaged. Third, there is a *zeitgeist* that points to a deficiency in considering the human person merely as a learning machine or as "adjusted" to society. Awareness of autonomy and self-direction on the personal level and consciousness of black power and student power on the social level point to a need for more advanced research in personality.

While psychological advances were being made in the area of learning and performance, personality theory was moving in the direction of social personality with a realization that motivational factors are not simply the outcome of early life experiences, but like the variables involved in cognitive skills, they reflect variations in social background and later life experiences. In fact, such personality variables are also cognitive variables as well: they have to do with thinking, planning, foresight, self-conceptions, beliefs, etc. Hopefully, such variables will provide a base for a new psychometrics that allows one to get a handle on personality and motivational factors. For example, need for achievement may be found to break down into subconcepts such as "values held" and "expectations about achieving those values." At the same time as one looks at behavioral outcomes, one must also look at the social-cultural situation because this is what provides discriminant validity to these concepts.

Research Needs

There is a high priority to "cleanup" the profile of psychological characteristics associated with deprivation. To do so, research must be done to develop new and sophisticated measurement instruments so as to determine, if possible, what the underlying dimensions may be.

Once such instrumentation has been developed, we need to do multivariate analysis to determine what is involved in what has been roughly identified as the "deprivation syndrome" and to establish those priority interactions among the characteristics associated with deprivation.

We need to know a great deal more about the way the profile of psychological characteristics associated with deprivation develops. To do so, we will have to have some idea of the structure of the motivational system and the motivational system changing over time. It would be ideal if we could develop something like a "motivational quotient", on the model of the IQ. We need to know about the developmental sequence of the emotions. At this point, in contrast to the area of cognition, we do not even know what the norms are. For example, if "independence-dependence" turned out to be a core dimension of personality, we would need to know what the norms for independence were, how they change over time, how independence is related to other personality variables, how other personality variables are related to one another, etc. At the same time, we need to know to what proximal environmental variables the underlying dimensions of personality may be related. Longitudinal studies, for all of their difficulties, may be the only way of getting at questions of this kind.

As soon as one begins to look at change over time, one runs into a major theoretical issue that has not been settled but which has great importance for any intervention among deprived populations. Is personality development mostly a matter of the unfolding of developmental sequences in which the succession of stages depends on inherent characteristics of the human organism (so the timing may be subject to environmental influences), or is it mostly a matter of accumulative incremental changes under environmental control as asserted by social learning theory? If the former, on what dimensions of personality does genetic endowment make a major difference? The answer to this open question is probably not an either-or answer, but it may very well depend on the kinds of variables you are looking at. Some dimensions may be mostly sequential while others are mostly incremental.

Correlatively, we need a great deal more information about what factors in the environment affect the personality variables we do study. Most psychological studies take place within organizational settings, that is, psychologists study students in schools and colleges, the mentally retarded in institutions, and the aged in homes, etc. We cannot continue to act as if these institutional environments do not affect our data and our conclusions. We must, in fact, find out which proximal environmental variables affect personality variables and how they do so.

While the research scientist must be aware of the effect institutional environments have on behavior and, therefore, on the variables he is studying, we can at the same time point out the gaps we have in research knowledge because institutional settings are not available in which to study certain age groups. Child care and infancy centers would not only provide a much needed service to deprived populations, but they would also provide access to populations the research scientist otherwise cannot reach or whom he can reach only with the greatest difficulty. It would also be helpful if most institutional systems in education, health care, etc. were open to the researcher. The other population about whom we know relatively little are adults between the ages of 20 and 50. How to gain access to this population with any degree of randomness is a more difficult question.

Research Policy

It was recommended that the NICHD take the lead in bringing personality research back into the mainstream of psychological research interests, much as it did in bringing research in mental retardation to new levels of competence and scientific respectability. The NICHD should support efforts aimed at improving the theory and the methodology of personality psychology.

In order to release competent scientists for creative, long-term research that gets beyond the single variable point of view and into multivariable analysis, consideration should be given to instituting something like the career award in personality psychology. This would be one way of stimulating advances in this important area.

Because the personal, emotional, affective side of human behavior is a matter of obvious human concern and of great importance for understanding many of the phenomena associated with deprivation, research in these areas should be supported even though instrumentation in this area remains rather primitive and underdeveloped. Where longitudinal studies are appropriate to these concerns, they should be supported even though they are difficult in practice.

Action Programs and Interventions

In the overall points of view, we should be careful lest intervention programs be evaluated merely on the basis of learning and performance without taking into consideration the effects they may have in the realm of personality and overall social competency. The multiple variable approach is as relevant to evaluation as it is to research.

One of the major problems facing deprived populations is in acquiring something like a "competence syndrome". The major task of intervention is to manipulate environmental conditions so as to maximize values, attitudes, feelings and dispositions associated with social competence. We find deprived people caught up in vicious, self-defeating circles of causation that keep them from effectively utilizing such opportunities as they have. The problem is to convert such vicious circles into benign ones in which self-confidence and opportunity breed effort and success and thus further the person's efforts to commit himself to constructive action. For example, physical or mental defects or failure in school may subject the deprived to highly stigmatizing behavior from others which leads in turn to alienation and despair. We must ask how institutional settings can be constructed to maximize the chances for success. Should not a wider variety of skills and personal qualities be rewarded in our society? Should we not appreciate diversity when it is joined to excellence of any kind? In a society very much dedicated to upward mobility in occupational success, questions of these kinds raise real dilemmas for which we have no answers. But at the more proximal level, intervention programs should maximize the successes of the deprived however possible in the expectation that the psychological outcome of such behaviors can be transferred to other behaviors. (One hardly needs mention that a realistic honesty must also be part of such programs.)

Part of what we are trying to explore has to do with a more sophisticated and developed theory of intervention in which relevant research knowledge and theory is brought to the multiple intervention design.

LEARNING AND PERFORMANCE

Overall Perspective

The perspective emerging in the area of learning and performance most of all involves conceptual linkages with other perspectives—linkages within psychology to the whole area of motivation and personality, linkages to biological endowment and genetics, and linkages to the proximal environment as well as the larger social structure.

While the whole area of learning and performance has made significant strides forward in the last decade, it is now becoming apparent, especially in concern with deprived populations, that we need to consider variables other than cognitive and performance ones.

Research Needs

To what extent is there a biological and genetic input in learning and performance? In the past, in reaction to a misconceived and earlier geneticism, we may have taken an extremely environmentalist position, almost considering the learner as an empty organism. With new information from behavioral genetics, it is time to consider what the genetic inputs really are in the learning process. However, the questions should be properly asked. It is not a question of how much of one's ability is accounted for by genetic endowment—this question cannot be answered since both genetic endowment and environment are essential—but how genetic endowment interacts with environmental input to determine behavioral outcome. In a more programmatic vein, one might ask how genetically determined capabilities which may differ between individuals, groups, and populations can be maximized by properly structured environments.

We have depended too much on the useful measures of general IQ. If our aim is to develop *each* child's potentialities rather than to select out a favored few and to reject the rest, we need to give more emphasis to the child's profile of special abilities. We need to adopt a strategy of "classification," that is, assigning the best educational program and the best career plan for each child.

We need to develop research strategies that help us to discover special abilities for classification purposes and attempt to use a wider range of measures based on the deprived population under consideration.

At the same time and correlatively, we need far more accurate descriptions and measurements of the environment. We need to know more about the environments of particular cultures, particular ethnic groups, and various age groups. We need to know more about the stimulus environment of babies, toddlers, and preschool children in various urban and rural poverty settings. We need to know more about the verbal environment of deprived groups. We have almost no systematic knowledge about the learning environment of the average adult in the middle years (20 to 50) and we need to know a great deal more about the stimulus environment of the aged. Moreover, the whole question of self-reinforcement as a learning mechanism needs further research.

Environmental studies of this kind are very important for two reasons. In a mediational model of learning and performance, the way a person perceives environmental stimuli is crucial for learning and motivation and there are no doubt great differences in perception within and between various groups. Second, one can neither carefully analyze nor construct contingencies of reinforcement without a more thorough knowledge of various groups.

The creative manipulation of environmental contingencies would seem to hold great promise for improved learning and performance among the deprived. However, the whole area of reinforcement contingencies cannot be approached grossly but deserves most careful analysis. Such an analysis must attempt to find out, in a most explicit way, just what is reinforcing, the classes of reinforcers for various groups, the scheduling of reinforcers, and it must also be sensitive to unintended outcomes.

There are a number of research issues with immediate implications for policy that remain unresolved. Is learning best explained by a theory of cognitive stages or does a cumulative learning model best explain the phenomenon? Should one follow an emphasis on learning as specific training, or are those who emphasize social personality correct in their emphasis on the necessity for the learner to have a good self-concept? It is against such unresolved theoretical issues that one is forced to ask a number of practical questions. For example, should instruction in reading take place within the verbal context of the street language or in the standard language? Should middle-class children and lower class children be placed in the same classroom? Should the atmosphere of the classroom be competitive or cooperative? Such questions are complicated by several factors. First, there is the question of the criteria to be used in answering these questions. Second, there are probably within-group and between-group differences that must be considered. Differences by ethnic group, age group, ability level, sex, etc., may be crucial and should be controlled.

The ideal approach to such research issues implies cooperation between research scientists and program and policy oriented people. The scientist can offer some idea about what the relevant variables are and people involved in program and implementation can offer significant insights about the practical situation and which elements of the environment can be manipulated. In most instances, alternative models will present themselves in research issues of this kind. It then becomes necessary to run pilot projects testing both models and it is crucially important that sophisticated evaluative research be done on both. Such evaluation should also include dependent variables of a widely spaced nature to test for latent and unintended effects.

The degree to which particular cognitive processes are trainable and the degree to which others are not is a crucial issue in research. What are the limits of trainability for particular capacities? Which cognitive processes are amenable to environmental inputs and which processes are more maturational kinds of phenomena? Perhaps, this whole question should not be approached as an argument between the developmental and environmental point of view, but we should be asking to what extent particular behaviors can be represented as a point on a grid between the developmental and environmental axes.

We need research concerning the various functions of programed learning, especially research on computer-assisted learning. While computer-assisted learning may be highly reinforcing, we do not know what effects placing a machine in a socializing role may have on children. Does the machine become an authority figure for the child? Does this experience affect the attitude of the child toward the whole technological system? Moreover, does programed learning contribute to the overall social competence of the child, or does it actually deprive the child of social competencies it should be learning. For example, does computer-assisted teaching contribute to a "I don't know" syndrome? Can the machine compensate for the motivational deficits of deprived children or is this a task for which only a teacher can be programed? Once again, the answers to these questions likely admit various individual and group level differences but we have yet to do the research that would give us the answers. Given the fact that teaching machines will likely be in most schools in the relatively near future, this is an area we need to know about.

Action Programs and Interventions

When action programs and interventions are undertaken, they should be undertaken with an awareness that they provide the opportunity for advancing basic knowledge and for casting light, at times, on alternate theoretical conceptualizations. It is important that we develop an effective methodology for designing and implementing action programs and interventions. Such a methodology would look to the processes by which action programs are derived and it would also be concerned with interaction between the research oriented scientist and the social practitioner.

When action programs and interventions are undertaken, they should be undertaken with an awareness of the possibilities of latent, unintended and perhaps, harmful effects. To judge uintended effects, widely spaced dependent variables should be included in evaluative research which will monitor unintended consequences.

Since researchers with single minded perspectives and enthusiasms are known to exist, we need research to specify the limits of the phenomena they are able to explain and to discover unintended side effects, if any, of their approaches to the problems.

Programs should be developed to maximize the life chances—insofar as possible—of deprived populations. To this end, classification rather than selection models (as previously defined) should be implemented in education, training, and job programs.

Human engineering should design appropriate contingencies that reinforce socially desirable learning.

Because we are not likely to be sure of what the relevant variables are in intervention programs, large scale interventions should be preceded by clinical trials and pilot projects which receive sophisticated evaluation.

SOCIAL STRUCTURE AND SOCIALIZATION

Overall Perspectives

How does macrosocial structure impinge on individual human behavior? While this is a traditional question of sociology, it constitutes a new perspective for those who study the deprivation phenomenon from a biological and psychological point of view. At best, scientists in these areas are used to treating only the most proximal social variables such as the role of the teacher or the role of the parent. Few scientists at the biological or psychological level exhibit much interest in macrosocial forces.

But many of the socially undesirable consequences of deprivation are group-level rather than individual phenomena. The consequences of deprivation characterize the behavior not only of the individual over many of his life's roles (a psychological fact), but they also characterize certain roles (being a member of some ethnic group, or some institutionalized population, or some age group) over many people. There are consistencies in behavior among certain subgroups in our society that indicate that we are dealing with a sociological as well as a psychological phenomenon.

Just how social structure translates itself into individual behavior is by and large itself an unresolved issue. Three models are variously used. The first model, and that most familiar to psychologists, is that social structure translates itself into behavior through the socialization process. People learn values, attitudes, beliefs, etc., and so come to act in such-and-such a way. There are various perspectives of how socialization takes place but all presume some internalization of behavioral norms and thus introduce intervening psychological variables. The second view sees the linkage between social structure (roles) and individual behavior as subculture; that is, the behavior of some group or subgroup shows consistencies of behavior because of shared values, beliefs, etc., which in turn are reinforced by specific patterns of communication and interaction. The third point of view stresses a more direct link between social structure (roles) and individual behavior. This model does not presume socialization or internalization. Rather, it stresses the fact that social organization (role nets) by its ordinary allocation of rewards and punishments can bring about certain human behaviors without the necessity of positing the socialization process and intervening psychological variables.

Within the deprivation phenomenon, it is likely that all three of these models are operative. But any one of them would imply that deprivation cannot be understood nor can meaningful interventions be implemented without attention to social structure.

The question is complicated by the fact that social structure is a vastly complicated and interrelated net that admits of various levels of analysis. It may be readily apparent that the way parents and teachers relate to children has an effect on human development. What is less apparent is that, for example, the teacher's interaction with the pupil is affected by a host of other social arrangements. These would include the bureaucratic structure of the school, the central control of the school system by certain elements of the community, the social arrangements among peer groups of students, the socialization of the teacher herself and the nature of teacher training institutions, selective recruitment into the teaching profession, the role of women in American Society, the prestige hierarchy among professions, and so forth.

Almost any analysis of social structure at the psychological level can be pushed back to a consideration of those roles at a group level, organizational level, institutional level, and even societal level of analysis. Moreover, all of these levels of social organization are interrelated so that input or change at one level may have outcomes, and often unforeseen outcomes, at levels not even under consideration. This organizational complexity raises the question of intended and manifest effects of social intervention and unintended and latent (and sometimes harmful) effects of which both researchers and policymakers should be aware.

A good example of interrelatedness is the probable effect of the social security system. On the face of it, social security means that most people over a certain age get a certain guaranteed income. This simple piece of beneficient legislation has probably had effects on age at marriage, fertility patterns, lifetime buying and savings patterns, the structure of the family, patterns of childrearing, and the nature of the labor force to mention only those factors which come immediately to mind. Similar effects of suggested legislation in the area of guaranteed annual wage or negative income tax can at this point only be imagined. But pilot programs in this area which were properly researched could give us some of the answers.

The list of possibly relevent social factors mentioned in previous paragraphs may seem to make the problem so unmanageable as to preclude any effective social action. But we do not mean to imply that all of the factors alluded to are equally important or that we could solve all of our social problems even if we had all of the relevant information. There is the important fact that solving social problems is not simply a matter of having the necessary information. Solutions are also tied to the whole question of the political decision making process and the allocation of power within a society.

The point of listing some of the relevant social factors is merely to point them out and to ask whether social policy makers always take them into consideration. Such a listing also makes apparent the fact that social practitioners most often deal with only one or the other of these elements at a time.

The plea would be for a methodology of social intervention that takes such structural factors into consideration, that promotes the research needed to establish what the most important factors may be within a specific problem, and which uses highly rationalized risk taking in putting the best conceived programs into operation.

Research Needs

Within the social structural perspective, certain research issues present themselves as having strategic importance for psychosocial deprivation.

We need to know what the important linkages are between social structure and individual behavior. At the psychologically proximal level, it is possible to identify such things as stigmatizing behavior on the part of welfare functionaries toward their clients, poor attitudes of teachers toward their students, peer group behavior which reinforces socially undesirable outcomes, inadequate parents and poor family life, etc. But we can go on to ask why parents, peers, teachers, and social welfare functionaries act the way they do. What changes in the organization of helping institutions, schools, local police, residential patterns, the job market, etc., would alter the behavior of various of these groups in ways more conducive to optimal human development. And the analysis could be pushed further up the structural ladder. What political and economic changes would be necessary to bring about such outcomes? For example, agencies of socialization are themselves dependent variables in relationship to the larger social context. They could be analyzed in terms of the style of their staff relations, the style of their bureaucracy, their modes of financing, the mechanisms of their self-maintenance, the collusions they enter into with their clients, etc.

While a good deal of impressionistic information and single case studies exist on topics of this kind, we have relatively little information based on adequate samples where social organizations or units of social organizations are themselves the sample population.

Another large research area concerns whether or not the phenomena associated with poverty in rural and urban slums are to be attributed to a self-sustaining culture of poverty or whether such phenomena are merely the natural correlates of social stratification. This point was discussed at some length in chapter four. As a research issue, however, it has great importance and we must ask how it might be best researched. Is there an analytic method that will allow us to get at this issue or can it be approached only through close study of peoples' responsiveness to specific intervention programs? On the basis of good impressionistic information, the poor seem to represent a vastly heterogenous set of populations and many different processes may be operative. It is likely that the answer to our question is not an either-or answer but that different processes are operative among different groups. The object of good research would be to identifv those groups and those processes in all their diversity. While this is a formidable research task, meaningful intervention programs depend on such information.

In view of the fact that poverty has a different set of consequences in different countries, some research in this area should be cross-cultural and include industrialized European as well as developing countries.

Another major research area has to do with institutional change. Ongoing social systems, even when they have become ineffective for their purposes, are known to be slow to change. Short of revolution, how does one bring about changes in organizations and institutions? Most organizations change only in response to forces outside themselves. In what way do competitive institutions effect change? With what people are they staffed? How do the processes of co-optation effect change? In some instances, the institution co-opts the dissident minority and no change takes place. In other instances, the dissident minority is effective in changing the institution. What different mechanisms are operative in the two cases? What is the function of the marginal man in these cases? How does he survive? These are all researchable questions and with the advent of the black-power concept and student protestors, they take on added significance.

Related to the issue of change is how one builds reciprocity and mutuality into institutional relationships which are necessarily unequal and stratified. Whether one is talking about student-administration relationships in the university or neighborhood control of social action programs, we need to know more about the mechanisms.

How does one go about instituting change in parental childrearing? Does one set up agencies which give other socialization agencies more time with the children, thus further limiting the interaction of parents and children? Or does one take parents into such agencies as staff, thus giving the agency time to work with the parents and children simultaneously? With what sort of social organization—staff to parent ratio—is this likely to be accomplished? Or should the emphasis even be on changing people? What changes could be made in present institutions and organizations to accommodate the poor and the "different" as they are? For example, have the requirements for various work roles been placed artificially high with the schools exercising a selective function for the business and industrial enterprise? What do we really know about the match between various job requirements and skill levels? Should efforts be made to institute a classification rather than a selection model in our society? A good deal of research needs to be done even to approximate such a classification atlas.

One of the problems cutting across the deprivation phenomenon is that some social institutions are simply not doing the job they were designed to do. When interventions are made, good results appear for awhile and then the institution may slip back into apathy. The good effects are not the result of the manipulation of organizational variables, but they are in fact the result of the Hawthorne and/or Rosenthal effects. (In the Hawthorne effect, people respond favorably to the greater attention they receive in being the object of the investigator's interest; in the Rosenthal effect, people change in the direction they think the investigator wants them to change.) These two phenomenon raise the possibility of institutionalizing these two effects. One might ask how more expressive behavior might be built into the instrumental behavior which characterizes the institutions which serve the poor.

We need to know more about the effects of programed learning, especially a computer-based teaching technology, as a socializing agent. We need to know how the total social organization of the classroom affects learning and emotional development. We need to understand better and yet get beyond the teacher-student relationship as the significant social relationship involved in the learning process. We need to know more about cross-age social relationships in the classroom and elsewhere, as well as understanding better the importance of peers in the socialization process.

We need more descriptive analyses of the environments of various groups. It seems apparent that the poor are not all alike and yet we are not even sure on which important dimensions they differ. Moreover, we know very little about the cognitive and emotional development of the child between the ages of 1 and 3. We know very little about cognitive and emotional changes in the adult between the ages of 20 and 50. Whether such studies are phenomenological and descriptive or whether they combine description with some primitive scoring system, at this point in our knowledge they would make for a considerable advance.

We also know very little about the articulation betwen the various institutions. As a person goes through life, he often passes from one organization to another "like a letter through the mail." We lack sufficient knowledge about the smoothness or the roughness of these transfers as well as a systematic knowledge of the ways in which one social organization prepares a person for participation in another organization from the family through the various school experiences into the labor force and the civic community. Even a descriptive knowledge of these processes carried out longitudinally would be a great advance. We also need to know how the organizations which impinge on the individual simultaneously—the family, school, gang, church, workplace—interact in influencing the individual.

Research Policy

This previous description of research needs has implications for research policy both for NICHD as well as for other funding agencies.

Perhaps the overriding need is for greater flexibility in funding research dealing with deprivation. This flexibility would grow out of a recognition that social structural research has great implications for individual human development and that an institute concerned with human development must have an interest in social structure beyond the psychologically proximal level. There is also a need for flexibility in funding the type of research that may have great relevance for understanding the deprivation phenomenon but which does not meet the ordinary requirements of classical study design. Such research projects would include phenomenological descriptive studies of the environment as well as "synthetic experiments" based on selected intervention programs and various types of longitudinal studies.

In order to accomplish this flexible and imaginative research funding, the NICHD should include on its training committees, site-visit teams and internal staff, persons who understand and appreciate the importance of the linkages between social structure and human development. These same persons should also appreciate the synthetic quality of the deprivation phenomenon and be open to creative and imaginative research efforts even when the present state of research technology does not allow classical study design.

NICHD should be aware of the possibilities of advancing substantive basic knowledge about the deprivation phenomenon through the study of selected intervention programs. The NICHD may not fund such interventions but would be aware of the possibilities selected interventions offer for research aimed both at understanding basic processes and advancing theory. The point of such studies would be not so much to assess the impact of interventions as to contribute to basic understanding. Such research on intervention programs would best be carried out by independent researchers based at university centers. NICHD should consider the possibility of support for such centers or at least the impact the NICHD might have in raising the prestige of such research efforts. It should use its resources in attracting first-rate researchers into this field. It should also consider how its own training support might influence research in this direction.

The vast scope and expensive nature of adequate research on social structure raises the question of the division of labor in social science research. While the NICHD recognizes the importance of macrosocial forces on human development and sees the need for such studies in carrying out its mandate, it recognizes the need for other agencies in the Federal Government capable of mounting large scale studies.

The problem of deprivation raises the question of how to use nonuniversity and nonlaboratory settings for the study of these phenomena. On the other hand, we need greater access to school systems and other institutional populations—an access which is sometimes blocked by political and administrative considerations. We need many more studies of people who are not in institutional settings: the child from 1 to 3, the street gang, the ghetto home, the adult during the middle years, etc.

In the interest of establishing bridges between those scientists concerned with macrosocial forces and scientists concerned with human development, the NICHD should encourage the appointment of human development scientists to the faculties of the Centers for Urban Studies at major universities.

Action Programs and Interventions

The social structural point of view leads one to ask whether or not intervention programs designed to help the "deprived" have been broad enough in their scope. Most interventions have taken place at the psychologically proximal level with attempts to change individual behavior. We have preschool education to prepare poor children for the school system and job training to prepare ghetto youth for the labor market, both of which programs carry some provision for getting money into the ghetto. Without passing judgment on these programs, one might ask whether more distal programs are not necessary simultaneously. What can be done to change the training and recruitment of teachers in schools that serve the disadvantaged so that the school the ghetto child enters presents a more realistic and congenial atmosphere? What needs to be done in the control and bureaucratic posture of public schools that will make them more responsive to the needs of the ghetto child? How are neighborhood residential patterns, public housing, welfare administrations—to mention some pertinent items—tied into the educational problems of the ghetto child? What constructive efforts could be made to use the very strong peer group influences of the ghetto for educational and social advances? How might job requirements be changed to allow qualified Negroes to enter the labor force? What mechanisms of local control could be used to provide a more adequate basis for public order? Any or all of these areas might have more impact on the life chances of the ghetto poor than a year in a program designed by the most eminent educational psychologist.

Both the nature of the deprivation syndrome and the structural point of view indicate that social interventions must be sophisticated and coordinated in their multiple inputs. We cannot effectively attack deprivation at only one level, e.g., the school system. And it is unlikely that we can attack deprivation at every possible point of intervention. But we can attempt to intervene at the most significant points in a coordinated way. This coordination is currently lacking in most intervention programs.

Intervention programs aimed at bringing about changes in organizations and institutions should have a high intervention priority. Competitive organizations could be introduced where there is a probability that they will stimulate constructive changes in the existing institutions. We should make efforts to use community leadership as a means of changing existing institutions.

What is especially needed is a new role in the social sciences to link basic research and practical application. Such a social science engineer would be a specialist in designing and implementing meaningful interventions based on the best social science knowledge. His substantive knowledge of social science should be as thorough as that of the research oriented social scientist, but his special province would be creatively designed interventions rather than research itself.

The various professional schools—social work, public administration, public health, city planning—have in part aimed at this function but have, understandably, developed their own self-limiting patterns. New efforts are needed inside and outside these schools to stimulate the development of needed people to bridge the gap between research and application. And such training efforts should include more input from the relevant disciplinary departments.

BIOLOGICAL SUBSTRATES

Overall Perspectives

There is a significant, cumulative body of facts concerning the biological substrates of deprivation. These include the studies of nutrition and development as well as sensory, stimulus, and maternal deprivation studies. If a new perspective has emerged in this area, it is, once again the need for a comprehensive point of view which is sensitive to the interactions between biological and psychosociological variables perceived jointly. For example ceivable that the behavioral geneticist may someday tell us a great deal about the contingency reinforcements needed to maximize both learning and motivation. He may also provide information about the types of environmental conditions which are harmful to persons and groups with specific genetic endowments.

Given the fact that deprivation is a social phenomenon affecting definable subgroups in the population, it would be helpful to have more information on the intergenerational interaction between the biological and social environment. Ethnic as well as social class groups are characterized by differential fertility and differential assortative mating. Given the fact that gene pools exist within existing population and that differential fertility and assortative mating are the basic conditions which affect changes in the frequency and distribution of genes, then we want to know how genetic factors effect social stratification and how social stratification effects the biological endowment of certain populations across generations. Such facts would provide important information for any long-term planned social change.

Another important research area concerns the significance of sensory deprivation studies for economically and socially deprived human populations. While sensory deprivation studies carried out with animals are informative about brain function and development, their relevance for the human populations suffering from depriving social and economic conditions is not very clear. On the basis of present knowledge, extrapolation from animal studies to deprived human populations would be quite risky. On the other hand, sensory deprivation studies carried out with animals may provide the analogue for a set of depriving conditions which do affect human beings. For humans, the lack of complex and properly patterned sensory stimulation (e.g. the printed page) may have important implications for human development in that encoding and decoding mechanisms of the human brain are not developed at critical periods so that the lack of the proper kind of stimulation may have important effects for reading, language development, etc. More research in this area is needed to clarify this problem.

Another aspect of the sensory deprivation problem relates to the issue of maternal social deprivation where animal isolation studies have shown the development of behavioral pathologies, for example, hyperexcitability, hyperreactivity and increased violent-aggressive behavior as a consequence of these early isolation experiences. Preliminary data suggest that there are organic deficits in the brain and nervous system associated with early maternal-social deprivation and thus suggests a biological basis and predisposition to violent-aggressive behavior. The available data, however, are sparse and a highly focused research program is required to identify the nature and quality of the biological aspects of this problem area.

Studies of mother-child interaction should be undertaken with an awareness that there is a bilateral pattern of interaction between mother and child. What the child offers as a pattern to the mother may be the stimulus rather the question is not whether or how much genetic endowment controls development and behavior but how does genotype, in interaction with specific environments, lead to phenotypic expression. Or the question concerns not only the relationship between nutrition and physical and psychological growth and development, but also the relationship between the emotional climate of the mother or child and physical growth, or the interaction between nutrition and emotional climate. Moreover, deviations from the norms of physical or psychological growth themselves admit of various social definitions among different ethnic, racial, and social class groupings. What effects do these differences have on the ultimate behavior of the child?

Research Needs

The NICHD's interest in the whole question of nutrition should continue and expand. Besides the question of nutrition and physical growth, we need more information on the relationship between nutrition and the development of intelligence, especially with respect to marginal protein deficiency. We need more information about malnutrition possibilities in the United States, whether malnutrition is marginal by any international standard, and the effect this may have on the deprived child subsequent to birth, during infancy, and in childhood. We need much more information on an area that is just beginning to gain attention, the effect of emotional climate on growth. A high-stress situation for the mother may have very damaging effects on the undeveloped fetus. And stress situations for the child may likewise affect physical and cognitive development.

There is evidence from animal studies that malnutrition during the gestational period has more severe debilitating effects than neonatal or infant malnutrition and that these effects are permanent and irreversible. The evidence from human populations is not at all clear on this point and more research is needed.

It would be helpful to develop a social psychology of morphology. Physical and even physiological parameters, and changes in these with age, are given social definitions which differ by ethnic group, by culture, and even by agency. For example, the issue of early versus late maturity or the absence of certain motor skills may have different social meanings for a teenager depending on his social class, ethnic group, peer group, etc. If we are interested in the linkages between physical parameters and ultimate behavior outcomes, we need to give some attention to the different meanings placed on these facts of differential development.

Behavioral geneticists should continue to advance our knowledge of the ways genetic endowment interacts with variations in the environment to explain both physical and behavioral differences. The significance of such advances would be to allow for the provision of optimum environment for individuals or groups suffering from depriving conditions. It is not incon-

INDEX

A

- Aberdeen, Scotland, study on maternal malnutrition and child health, 243
- Absence of research in ongoing programs inexcusable, 214
- Abstract stimulus complexes, 115
- Abstract thinking and conceptualization difficulties, 151
- Academic ability self-ratings, 25–26
- Academic achievement
  - *see Achievement,* scholastic
- Academic institutions competing for Negroes to add to staffs, 209
- Academic tasks, reduced effectiveness in performing, 28
- Accomplishment, social, 1
- Acculturation as an intervention, 94
- Achievement
  - achievement dispositions
    - anxiety, and, 20
    - definition, 16
    - development of, 16–27
  - achievement motivation
    - independence training and, 15
    - parental qualities and, 27
    - teacher behavior and, 26
  - achievement motive
    - nonintellectual pursuits, and, 18
    - single global, 17–18
  - activism and passivism values and, 25
  - educational—socioeconomic status differences and, 107–110
  - the need for, 16–18
    - behavior variables and, 17
    - family size and, 17
  - values
    - attitudes and beliefs relevant to, 25–27
    - Negroes and white youth similarities in, 25
    - Negroes high on, 25
  - scholastic
    - internal control and, 18
  - scores tabulated, 110
    - socioeconomic status and, 101–112
    - teachers' bias and, 49
- ACTH response changed by handling during infancy, 251
- Action, lack of alternatives for a deprivation, 96
- Adaptation to institutional life, adult, 158
- Adaptive behavior approach in general psychology, 117
- Adolescence, emergency in American society, 195
- Adolescents—separation, vulnerable to, 59
- Adult, disadvantaged, learning process of, 139
- Adult learning, investigations of, 162
- Adult mental organization is hierarchical, 132
- Adult populations not readily accessible for personality research, 64
- Adults
  - characteristics of, institutional life, and, 158
  - deprived, status of, 137–142
  - institutional environment, and the, 158–159
- Advanced age and dependency, 195–196
- Advanced age carries its own stigma, 195
- Affection needed for self-esteem development, 31
- Affection, the development of, 13–16
- Affectional behavior, age mates and, 14
- Affiliative contact motivation in children, 14
- Affiliative needs, modes of expression of, 14
- African culture courses as intervention, 94
- Age and sense of "uselessness," 196
- Age—change of way of life, and, 138
- Age development of moral character, 32
- Age-scale properties of figure copying, 136–137
- Aged, the
  - apartment dwellings, in, 148
  - attach symbols of fear, rejection and dread to institutionalization, 145
  - diminishing sensory capacities, and, 123
  - economically deprived, 199
  - environmental change, and, 144–146

Aged, the—Continued
  inflation, and, 198
  institutions, in, 144, 148
  likely to have shorter life, 143
  psychology of, 148
Aggression
  anger and, adult, 12
  parental rejection, and, 15
  physically aggressive behavior in lower-class nondelinquent children, 32
Aggressiveness, 6
Aging, physical deterioration through, 92
Aging process, conceptualization of, 156
Aging, research on, 125
Aid to Families with Dependent Children, 207
Albert Einstein College of Medicine, Yeshiva University, 134
Alienation, five aspects of, 19
Ambiguity, intolerance for, authoritarian child-rearing, and, 42
American educational tract system a disadvantage, 188
American Indian children, study underway on, 101
American Orthopsychiatric Association, the, 213
American society never a true "melting pot," 209
Anemia and malnutrition, 243
Anglo-Saxon heritage, imaginative expression, and, 11
Anomalies, chromosomal, 248
Anoxia, birth injury, 245
Anthropologists' accounts of abandonment of the aged, 189–190
Antisocial activity and affectional problems, 15
Anxiety
  and achievement, 20
  excitement and physiological changes, 239
  fantasy a defense against, 13
  somatic signs of, 20
Apartment dwellings for elderly, results of moving into, 144
Aphasia, 124
Appalachia, Southern Whites in, 95
Aptitude and learning, 141, 142
Armed Forces Qualification Test, 141
Armed Services, literacy training in the. 140, 141
Asiatic groups and the American educational system, 118
Aspirations distrusted because of self-doubt. 37
Assertiveness, lack of in environment—deprivation and, 97
Associative clustering in free recall, 134–136
Associative learning and cognitive (conceptual) learning relationship investigation, 154–155
Attainment, scholastic, and IQ scores, 107
Attention span, short, in a child, 48
Attitude and achievement relationships, 19
Attitude object, stigma research catalogued by, 51
Auditory discrimination and socioeconomic differences, 111
Authoritarian child-rearing and empathy, 42
Authoritarianism, 192
Autonomic instability, 239–240
Autonomous achievement, desire for, 32
Autonomy for local schools, experimentation needed in, 206

B

Babinski reflex present in the fetus, 233
Background variables used in computing variance in achievement scores, 109
Balloon analogy for symptoms of stress states, 240
Bamford, J., 240
Barton, Betty, 271
Basic research in development of cognitive abilities, developmental processes, in, 154–156
Baxter, William, viii
Begab, Michael J., 27
Behavior
  achieving, middle-class families, and, 22
  adaptive, 114
  approval-disapproval, example, 39
  attributes listed, 6
  behavioral aberrations and stigma, 50
  behavioral bias toward stigmatized persons, 52
  behavioral changes, research needed on, 251
  behavioral development
    brain maturation, and, 233–236

  genetic contributions to, 245–249
  motor exercise and, 238
behavioral geneticists, 293
behavioral genetics, 245
behavioral pathologies associated with early deprivation, 255
behavioral patterns
  individual's functioning, affecting, v
  practiced mentally, 9
behavioral science disciplines focus on environmental dimensions, 5
behavioral sciences disciplines, the, 231
behavioral sciences investigators and stigma, 50
behavioral science's recent recognition of obstacles constituting psychosocial deprivation, 1
behavioral scientist—combining roles of scientist and participant in social action, 61
behavioral traits and race, 247
cultural factors in, 11
delay, 34
deprivation, and the effects of, 158
  deprived adults, in, 138
development and
    biological substrates of, vi, 229–269
  the enriched environment, 236–238
deviant, research paradigm of, 7
endpoint in a series of interactions, the, 231
evolving before birth, 233
human
  complex problem, a, 275
  comprehension of, the, 231
individual and environment—mechanisms of exchange between, 157–159
individual, institutionalization, and, 159
institutionalization of the aged, and, 142–149
macrosocial structure and human behavior, 285–286
modification and social intervention, 160
moral, 34
not rewarded by middle-class society, learning of as deprivation, 94
outcomes, valued facilitation of, 114
pattern development and drive deprivation, 57
patterns of those occupying social positions, 35
personal attributes, and, 8
  Sheldon White's list of, 133
  social institutions, and, 187
  social structure translated into, 286
  socially desirable, 114
  stigmatized children and behavior of mothers and teachers, 52
  symbolic, research needed in, 151
  temperature and psychosocial deprivation, and, 46
  things underlying, and the, 236
  variables controlling, analysis of, 113
Behavioristic learning theory, 126
Bennett, Thomas, vii, 271
Bereiter-Engelmann program, the, 134
Bias, behavioral, 52
Bilingualism, stable, Mexican-Americans, in, 117
Biochemical differences, individual, 246
Biological defect and deprivation, 6
Biological deficits in aging, 152
Biological deprivation
  see Psychosocial deprivation
Biological development, genetic contributions to, 245–249
Biological substrates, 278, 292–295
  development and behavior, of, 229–269
  overall perspectives, 292–293
  research needs, 293–295
Biomedical-behavioral domain, the, v
Biosocial interaction, 9
Birren, James E., vii, 89–183, 139, 271
Black nationalism, 123
"Black power" motto, 94
  significance of, 28
Black separatism, the emergence of, 200–202
Blackman, Leonard, viii
Blood sugar levels and EEG reactions, 240
Boggs, Elizabeth M., viii
Bongiovanni, Alfred M., viii
Borow, Henry, vii, xiii
Bortner, Ray, vii, 89
Bosma, James, viii
Brain
  brain and behavior, the, 232
  development
    before birth, 233
    effect of enriched environment, and the, 236–238
    motor area of, 234
    motor exercise and, 238
    sensory experience, and, 256

Brain—Continued
  electrical development of, 234
  female brain more sensitive to estrogen and progesterone, 249
  function and the role of regularity, 239–241
  function impaired by early malnutrition, 244
  maturation, 233–236
  stimulation and the, 237
Brain weight and biochemical activity affected by enrichment, 124
Bright child, parents' attitudes toward, the, 42
Broca syndrome, the, 124
Bronfenbrenner, Urie, vii, xiii, 57, 59, 60, 102, 248
Bureaucratic deprivation problem and teacher training, 205
"Bureaucratic personality," the, 45
Bureaucracy, 196
  deprived, and the, 202–204
  900 welfare agencies in U.S., 202
  organizational networks that handicapped must contend with, 202
  rehabilitation and the, 202
  stigma and the, 203
  welfare recipients' stances and, 203
Busse, Ewald, viii, 271

C

Caldwell, Bettye M., vii, xiii, 3
California Elementary School Administrators' Association, 108
California Test of Mental Maturity, the, 106
California, University of at Berkeley, 136
Calorie-protein deficiency disease, 243–244
Campbell, Donald T., 151, 62
Canestrari, Robert, viii
Cannon, Claude Bernard, 239
Carbohydrates and proteins in diet, 244
Career pattern, disorderly, 24
Carmichael's Manual of Child Psychology, 104
Categorization training paradigm, 135
Categorizing an important intellectual ability, 129
Casual chain, research needed on more links in, 67
Centers for Urban Studies at major universities, 29
Central city school systems and fiscal conservatism, 199–200
Central nervous system
  function deficiencies and linguistic functions, 124
  pathological conditions of, 125
Cerebral cortex development in newborn, 236, 237
Change of environment for aged disruptive and destructive, 146
Change of way of life difficult with increasing age, 138
Change, reactions to, 145
Changes in American society not suggested, 276
Chernigovskiy's *Interocepters*, 239
Chicago school system survey, 107
Child, the
  ability to conceal rewards, his, 43
  ages 1 to 3 important, 68
  capacitative changes, naturalistic approach to, 113
  care centers, for, 281
  child-environment interactive process, 48
  Chinese, tests on, 105
  crying the first interpersonal tactic, 43
  development and need for affective relationship, 60
  development, five major forces in, 59–60
  early childhood, significant variables in, 24
  handicapped, deprived and disturbed, action needed on, 213
  high in associative learning ability and poor in conceptual ability, 155
  linguistic behavior of, 156
  major contexts in which he lives, 60
  privacy important for, 10
  temperament categories of, 47
  temperamental attributes, teacher's reactions to, 48
Childbearing left largely to fortuitous circumstances, 194
Childrearing, parental—how can it be changed?, 289
Chromosomal anomalies in man, 248
Civil rights groups, the symbolic demands of, 200–201
Class and role-taking activities, 42
Cloward, Richard A., vii, 185
Clustering, associative, in learning, 130

Cognition and culture, quest for linkages between, 111–112
Cognitive activities and social background, 104
Cognitive abilities, basic research in the development of and change in, 151–156
Cognitive learning and associative learning, 154–155
Cognitive operations and socioeconomic differences, 110–111
Cognitive performance, determination of, 32
Cognitive processes and role functioning, 37
Cognitive processes—which are trainable?, 284
Cognitive resources, inner, 13
Cognitive training and children with short-term memory, 155
Cohen, Albert, vii, 95, 185
Cole, Jonathan, viii
Coleman Report, the 204
Colfax, J. David, vii, 185
College education and women, 198
Communication patterns in family, 2
Compensatory development across sense modalities, 152
Competence, interpersonal, development, 40–46
"Competence syndrome," 281
Competition for scarce resources, deprivation an outcome of, 96
Compliance pressure, deviant's reaction to, 53
Components of psychosocial deprivation, 5
Comprehensive care centers, schools are, 204
Concentric forces influencing child's attainment, 60
Conceptual milieu, the, 113
Conceptions of the roles of others by the child, 45
Condition considered dysfunctional by society, a, V
Conditioned reinforcing stimuli, children's differences, and, 116
Conscience and self-control, 35
Consensual marriage, 192
Contingencies for learning stimuli, and, 115
Coopersmith, Stanley, vii, xiii
Correlation between distal variables, 5
Cortex histology in fetus, 233
Corticosterone levels lowered in lactating females, 250
Corwin, Ronald, vii, 185
Cottrell, Fred, vii, 185
Creative possibilities and experimental actions, 9
Crowding, urban, and social interaction, 98
Cultural deprivation a poor concept, 96
Cultural deprivation and genetics, 198
Cultural disparity model in psychosocial deprivation, 94–96
Cultural factors, imaginative behavior and, 11
Cultural pluralism, deprivation as an outcome of, 94
Cultural relativism and psychosocial deprivation, 189
"Culturally deprived" an inadequate term, 149
Culturally deprived, a specialty in teaching the, 206
Culture and cognition, quest for linkages between, 111–112
"Culture conflict" hypothesis in error, 25
Culture differences and parental roles, 17
Culture of poverty—is there one?, 274
Curiosity motivation, the study of, 102

D

Danish study of maternal malnutrition and child health, 243
Daydreams
  studies on, 10
  value of, the, 13
"Dead End Kids, the," 238
Deafferentation causing nervous system changes, 252
Dearth of competent researchers, 213–214
Declines in central city tax bases, 199
Defects, congenital, 92
Deficits, central biological, 152
Delay behavior, 34
Delay responses, "ego strength" constructs, and, 34
"Delaying capacity," investigations into correlates of, 33
Delinquency, 6
  and ego strength, 65
  and social class, 31
Demographic variables and language development, 111

Dependence and personality development, 14
Dependence—independence motivation, 13–16
Dependency
  affection, and, 13
  appropriate time for, an, 194
  development of, 13
  dynamics of, the, 187
  fostered by superordinate element, 188
  not an undesirable characteristic, 14
  socially-defined and structured phenomenon, a, 187
Depersonalization of the institutionalized aged, 142
Depression in infants separated from mothers, 56
Depressed people having no ambition, 99
Deprivation
  aging, and, 160
  brain DNA levels in mice and, 255–256
  child health, and, v
  children in institutions, of, 58
  classification of types of needed, 158
  concept of, the, 2–3
  cultural relativism, and, 189
  deprivation syndrome—what is involved in?, 280
  deprived and disabled persons, functional limits imposed on, 209
  deprived—"disadvantaged" a better term than, 3
  deprived, identification of the, 189
  deprived person so defined because he deviates from what is considered normal, 188
  deprived persons' attempts at normality, 193
  deprived populations, 191
  economic, and self-confidence, 190
  framework, scope of, 5–7
  limitations of term, serious, 2
  personal characteristics, and, 188
  psychosocial, v
    complex factors involved in, v
    component areas of, four, v
  social intervention and change, and, 59
  sufficiency and satiety levels of deprivation, 98
  what is it?, 189, 190
Desegregated schools, anxiety of Negro pupils in, 20
Desideratum, knowledge of necessary to deprivation, 99
Destructive effects of low self-esteem, 28
Destructive consequences of low self-esteem, 30
Development
  see also Personality development
  behavior, and, vi
    biological substrates of, 229–269
  biological and behavioral, genetic contributions to, 245–249
  brain
    enriched environment, and, 236–238
    electrical, 234
  cognitive abilities, of—basic research in, 151–156
  compensatory, 152
  development trajectory, the, 63
  growth, and, personal, how to help?, 207
  human, across life span, v
  imaginative capacity in children and adults, of, 9
Developmental behavioral genetics of man, studies needed on, 249
Developmental indices and physical correlations, 155
Developmental personality theories, 38
Developmental processes, investigations into the, 154–156
Developmental quotients of infants, 49–50
Deviancy and behavior investigations, 53
Deviant individual and normal individual, interactions of, 53
Deviants and the preferences of nondeviants, 53–54
Deviants avoid social contact, 54
Deviants prefer to associate with deviants, 54
Deviations from standard English in California language study, 118
Difficult child, the, 47
Dilemma, terminological, a, 91
Diminution, ability to resist, the, 28
Disabled-nondisabled children, variables studies, 53
Disability of one family member, its impact on rest of family, 207
Disability, physical, a *social* fact, 188
Disadvantage
  conditions of, the, 2
  functional types and dimensions of, 4
  important between ages 1 and 3 years, 68

"Disadvantaged" a better term than "deprived," 3
"Disadvantaged" an inadequate term, 149
Disadvantaged adults
  assessment of intellectual achievement in, 153
  basic learning processes in, 152–153
  reinforcement principles for, 140
  teaching methods for, 139
  training strategies for, 140–141
  training technologies for, 153
Disadvantaged children, variables in study of, 3
Disadvantaged populations, need for more specific and precise definition of, 149
Discrimination, 6
Discrimination and self-esteem, 31
Discrimination against ethnic groups and poor, deprivation and, 96–97
Discussion of state-of-the-art papers, 273
Disparity between occupational aspirations and expectations, 23
Distal and proximal environments, 4
Distal variables, correlation between, 5
Distractibility, easy in a child, 48
DNA, 245, 256
Down's syndrome (mongolism), 248
Dragastin, Sigmund, vii, 233, 271, 273
Drive deprivation
  behavior pattern development, and, 57
  findings, 57
Dropouts, school—more in the North and West metropolitan areas, 109
Dropping out of school not dropping out of society, 190
Duncan, Leroy E., 271
Dwarfs and midgets alleviate their stigma condition, 54
Dysfunction of autonomic nervous system, 240

E

Early deprivation, adult victims of, 137–138
"Early Deprivation in Mammals and Man," 57
Easy child, the, 47
Eating habits and nutrition and cognitive development, 152
Eckland, Bruce, vii, 185–228, 271
Ecological base of the culture, 275
Ecology, urban, and deprivation, 6
Economic dependence, prolonged, 23
Economic deprivation, 92
Education
  American track system a disadvantage, 188
  appropriate time for, an, 194
  attitudes toward culturally-disadvantaged child, and the, 22
  educational age of unemployed adults tested, 138
  educational aspirations, social class differences in, 25
  educational attainment
    failure of, 1
    the job market, and, 210
  educational bureaucracy, 4
  educational compensatory intervention, 154
  educational conditions and de facto segregation, 200
  educational mobility, 46
  educational policy, Negro control of, 201
  educational problems of socially disadvantaged children, 125
  educational quality and financing, 199
  educational standards of unemployed adults tested, 138
  specialized versus comprehensive goals, 204–207
  urban, and fiscal conservatism, 199–200
EEG, fetal, 233
EEG reactions and stress, 240
Effective families, studies needed on, 68
Effective task orientation, 21–24
"Effects of Social Intervention on Psychological Development," 59
Ego development, 38
  moral behavior, and, 33
Eichorn, Dorothy, vii, 229
Eisdorfer, Carl, vii, 89
Elaboration paradox in preschool children, 128
Elder, Glen H., vii, 185
Elderly in institutions, studies of the, 143
Electrical activity in brain of fetuses and newborn, 233, 234
Emmerich, Walter, vii, xiii
Emotional adjustment problems, 232

Emotional attachment formation and infant deprivation, 57
Emotional traits of mother affect infant, 250
Emotionality and heredity, 246
Empathy (role-taking), practices inhibiting, 42
Empathy, the development of, 41
Empirical knowledge, present confines of, 64
Endocrines regulating stress responses and growth, 249–251
Enrichment—the opposite of deprivation, 56, 57
Environment
  absence of contingencies in, 93
  analysis of the expected (natural) environment, 157
  behavior, and—basic mechanisms of exchange between, 157–159
  brain growth and the enriched environment, 236–238
  control of, 18
  deviation from optimal environmental conditions, 97–99
  differentiation of, 3–5
  dimensions
    behavioral sciences focus on, 5
  distal, 4
  dual role of should be noted, 7
  environmental analysis conceptually underdeveloped, 4
  environmental attributes listed, 6
  environmental categories
    interaction within the, 40
    multifaceted nature of each, 40
  environmental change and the aged, 158
  environmental conditions subject to manipulation, 159
  environmental events not functional, 114
  environmental factors and social development of child, 46
  environmental influence categories, 38–40
    multiple environmental influences, 39
    social agents as models, 39
    social reinforcement, 39
    social structure, 38
  environmental insulation, 145
  environmental manipulation, 192
    stimulation of child, and, 22
  environmental stress, potential resistance to, 50
  environmental variation and variation in the genotype, 245–247
  environmental change and the aged, 144–146
  external control of, 18
  institutional, and adults, 158–159
  internal control of, 18
  lack of systematic theory of, 3
  Negro in the United States, and the, 4
  newborn, of the, 245
  personal control of, 18
  problematic, best treated as, 4
  proximal, 4, 6, 7
  responsiveness to the, 21
  rewards, and, 18
  sense of mastery in the, 151
  social, 114
    definition of, 113–114
  sociologists' interests in, 7
  studies needed on, extensive, 161–162
  trauma, environmental, 97
  urban—achievement tests, and, 109
  weaker neural systems and succumbing to, 240
Esteem
  see Self-esteem
Estrogen and progesterone, female brain sensitive to, 249
Ethnic differences in cognitive functions, 111
Ethnic discrimination and self-esteem, 31
Ethnic groups
  intelligence test performances of, 105
  process of learning English by, 117
Ethnic status and deprivation, 6
Ethnicity and deprivation, 98
European social scientists' studies of families across many decades, 212
Events, environmental, not affecting child's behavior, 116
Examination only of disadvantaged presents a misleading picture, 187
Exercise and the role of parks and playgrounds in development, 238–239
Experiential world, lack of pattern in, 93
Experimental honesty and measure of attention correlation, 32
Experiments, longitudinal, 161
External constraints and internal controls, 31

F

Face-hand test, 133
Failure, expectation of, low self-esteem, and, 29
Families, broken, 1
Families, disorganized, self-esteem development, and, 30
Families, effective, need for studies on, 68
Family, alternative to the, 195
Family atmosphere an environmental influence, 38
Family communication patterns, 2
Family involvement in child's environmental activities, 60
Family instability and low self-esteem, 29
Family patterns and children's role models, 12
Family structure, broken, other conditions accompanying, 64
Family, school interactions, and, 275–276
Fantasy behavior in normal development, 9
Fantasy play
  adult models, and, 11
  age of subject, and, 11
  behavior patterns, and, 12
  origins of, the, 10
  parental models and, 12
  parental tolerance of, 11
  physical objects, and, 10
  privacy necessary for, 10–11
Fantasy productions and need for achievement measurement, 17
Fantasy used by children to anticipate future status, 38
"Fate control" and achievement, 19
"Fate control," Pettigrew's, 18
Father absence, 3, 189
  affectional development, and, 15
  boys, effects on, 15
  derivative consequences of, 40
  girls, effects on, 16
  imaginative development, and, 12
  outcomes, and its, 64, 65
Father-dominant families and the behavior of girls, 16
Federal poverty income line, the, 189
Fels Research Institute, 24
Fels Research Foundation, the, 251
Fertility, differential, 294
Fifty scientists contributing to review, v
First-class citizenship, elimination of barriers to, 35
Fiscal conservatism and urban education, 199–200
Foman, Samuel, viii
Food, inadequate, low survival and growth rates and, 241
Foreman, Paul B., vii, 185
Fowler, William, vii, 89
Free recall, associative clustering in, 134–136
Freedom from Hunger Campaign, 243
Frustrations, period of acquiring new, the disturbed phase, 100
Fulfillment, personal, 1
Functional impairment, 9
  a stigma, 50
Functional levels affecting social structures—a cyclic process, v
Functioning, cognitive, 110
Future research, some implications for, 66

G

Gagne cumulative learning model of cognitive development, experimental program needed on, 151
Gagne, Robert M., 126, 132
Games
  benefits of, the, 238
  imaginative development, and, 11
Gates Advanced Primary Reading Test, 110
Gates Basic Reading Test, 110
Genetics
  background and behavior differences, 247
  behavioral, 245
  basis for schizophrenia, 246
  contributions to development, 245–249
  cultural deprivation, and, 198
  endowment and learning and performance, 283
  endowment and nutrition interactions, 241
  principles, studies needed on, 248–249
Genotype variation and environmental variation, 245–247
Gentry–peasant comments, 99
Geographic boundaries and the culturally-disadvantaged child, 22
Geometric form copying tests, 136

Gerard, Harold B., vii, xiii
Geriatric mental patients in institutions, 148
Gesell infant test, the, 235
Gewirtz, Jacob L., vii, 89, 93, 112, 114
Ghetto
  cultural matrix of, the, 95
  dwellings, 1
  residents apathetic and militant, 1
Glaser, Robert, viii
Global estimates of behavior and socioeconomic differences, 104
Glucose tolerance, early, and maternal malnutrition, 244
Goals, superordinate and child's development, 60–63
Goffman's self-preservation theory, 41
Goldstein, Hyman, viii
Grasp reflex present in the fetus, 233
Graves, T.D., 7
Griffith Intelligence Scale, the, 103
Group behavior consistencies, 286
Group faces and child's development, 59
Group recognition and approval in intervention program, 60
Growth, maturation and development, 231–240
Growth
  mental and physical activity, and, 251
  physical, psychological factors in, 242
  pituitary regulation of an established principle, 249
Guttman-scale properties, 136

H

Hall, John, viii
Handicapped child, overprotection of the, 195
Handling during infancy produces ACTH response changes, 251
Hanson, R. J., 7
Haptic-visual transfer studies needed on, 151
"Hard-core" poor, the, 191
Harlem schools (N.Y.), performance of children in, 110
Harlow's Wisconsin Laboratories, 235
Hartup, Willard W., vii, xiii
Hawthorne effect, the, 147, 289
Head Start Program, 192
Health and inbreeding, 247
Health defined, 61
Health institutions isolated from school systems, and vice versa, 160
Health, physical, 1
Health sciences concerned with human development, 231
Heber, Rick, 158
Heredity and personality traits, 246
Hess, Robert, vii, 93, 96, 102, 104, 107, 111, 112, 154, 271
Hierarchial arrangement of learning processes, 132
High activity level in a child misinterpreted, 49
Hobbs, Nicholas, viii
Hollingshead's Two-Factor Index of Social Position, 108
Home, structural integrity of achievement test results, and, 109
Homeostasis and brain function, 239–241
Hormones
  see Endocrines
Hospitalization of infants, consequences of, 49–50
Human behavior, comprehension of, the, 231
Human development, NICHD's mandate to study, 273
Human development scientists at Centers for Urban Studies, 291
Human inbreeding, 247
Human interaction, a series of bridges, 213
Human resources and industrialization, 196–199
Hypopituitarism, pseudoidiopathic, 242

I

Identity categories interpreted as stigmata, 37
Identity fragmentation in aged, 144
Identity and interpersonal competence, 41
Identity maintenance important, 40, 41
Ideology, development of, 31–35
Illinois, State of, Department of Mental Health Project, 147
Illinois, University of, the, 134
Illiterate adults ashamed of fact, 140
Imaginary difficulties, 101
Imagination, studies using, 10

Imaginative behavior, cultural factors and, 11
Imaginative capacity development, 9
Imaginative development
  environment and, 11
  father absence and, 12
  socioeconomic status and, 12
  television viewing and, 11
Impoverished environments, subcultures created within, 191
Impulsive behavior in deprived adults, 138
Impulsive expression in adults fantasy development, and, 12–13
Inadequacy means low economic status, 197
Inbreeding
  human populations, in, 247
  IQ, affected by, 247
Income and deprivation, 98
Income and social-educational aspirations, 25
Income tax, negative, 287
Indians in North and South America, anthropological descriptions of, 99
Industrial corporations competing for Negroes, 209
Industrialization and human resources, 196–199
Infancy, early, middle and late, maternal deprivation in, 57, 58
Infant, the
  cared for by young mentally-retarded girls, results of, 56–57
  deprivation levels, 49
  development of and mother's diet, 243
  developmental quotients of, 49–50
  direct stimulation of and later development, 251
  disadvantaged at 11 months, 103
  EEG, histological and behavioral correlates exhibited in, 236
  growth of and maternal health and nutrition, 241–245
  infant death—"failure to thrive," 241
  infant-mother interactions, 250–251
  responsiveness to social stimuli, 115
  separated from mothers, depression in, 56
Infectious diseases and nutrition, 241
Inferiority, feelings of, 192
Inferiority means low economic status, 197
Inflation and the aged, 198
Information, adequacy of in environment, 98
Information processing, research needed in, 151
Instability, autonomic, 239–240
Institutional deprivation, 56, 58
Institutional effects, direct studies of, 146–149
Institutional environment and adults, 158–159
Institutional environments, Townsend's succinct summary of, 142
Institutional growth rates studies in children, 242
Institutional structures and deprivation, 6
Institutionalization of the aged, comparative analysis of, 148
Institutionalization, length of, 147
Institutions
  aged for
    characteristics of, deleterious, 143
    effects on behavior, 142–149
    good and bad, 148, 149
  analyses of needed, 158–159
  articulation between, 290
  catering for children—and maladaptive reactions, 149
  effect of, the, 98
  studies of elderly in, 143
Insults, ritualized or abstract—Negro children, used by, 122
Integrative perspective
  difficulties of, the, 276–278
  necessity for, 275–276
Intellectual achievement and parental warmth, 18
Intellectual functions
  correlations, 124
  decline of, 124
  genetic determination, and, 246
Intellectual growth of school children, an experiment, 55
Intellectual level and quality of participation confused by teachers, 49
Intellectual maturation and perceptibilities development, 111
Intelligence
  abstract, 132
  assessments in children, 49
  conceptual, 132
  Intelligence and Experience, 56
  learning abilities relationships, and, 137
  liver enzyme deficiency, and 246
  nutrition, and, 293

Intelligence—Continued
  scholastic performance and social-class differences, and, 126
  tests, 106
    see also IQ tests
    unemployed adults, on, 138
Intensive relationships and child's development, 59
Interaction between stigmatized and nonstigmatized persons, 50
Interaction, biosocial, 9
Interaction pathology, 50
Interdisciplinary research supported by NICHD, 275
Interface between research policy and social action, 274–275
Intergroup prejudice, 63
Internal control important in academic achievement, 19
Interocepters (Chernigovskiy's), 239
Interpersonal competence, 35
  defined, 43
  development of, 40–46
  personal orientations, and, 45
Interpersonal reactions, deprivation, a major vehicle for, 68
Intervention, 111
  action programs must be prepared to intervene at many points, 276
  Americanization an, 94
  educational compensatory, 154
  experiments needed on, 158
  harmful effects of, possible, 285, 287
  not consistently good, 289
  pilot projects necessary, 285
  programs
    are they broad enough in scope?, 291
    closer study of, needed, 277–278
    evaluations needed, 62
    experimental, 60–61
    high priority, for, 292
    limitations of directors of, 61–62
    long-range effects of, 150
  what kinds should be emphasized?, 274
Introspection, studies in, 10
IQ gains in intellectual growth of school children experiment, 55
IQ—predictability of adult IQ in children, 133
IQ scores and scholastic attainment, 107
IQ, socioeconomic status and, 104
IQ tests
  affected by overall setting in which given, 121
  children in the Harlem (N.Y.) schools, in, 110
  depended on too much, 283
  disadvantages of, 103
  use of a constraint in research, 103
Irish subjects, great imaginativeness of, 11
Isolation, physiological correlates, and, 255
Isolation, social, 97, 255
  "the most severe deprivation condition," 255
Italian-American children, tests of, 105
Italian subjects, motoric behavior emphasis of, 11

J

Japanese-American children, tests on, 105
Jenkins, Gladys G., viii, 130
Jensen, Arthur, vii, 132, 249
Jessor, Richard, vii, 271
Jessor, Shirley L., 7, 67
Jewish children, tests on, 105
Job Corps Centers, literacy training in, 140, 141
Job requirements changes, 292

K

Kagan, Jerome, viii, 58, 102, 157
Kallen, David J., 271
Katz, Irwin, vii, xiii, 96
Kent, Donald P., vii, 185–228, 271
Kitten, brain maturation in, 234
Klock, Robert, vii, xiii, 51, 52
Knowledge of psychosocial deprivation, current, review of, 101–149
Knutti, Sarah H., 271
Kohlberg, Lawrence, vii, xiii
Kohs Block Design test, 106
Kreps, Juanita M., vii, 185
Kwashiorkor, 243

L

Labor demands and manpower, 209
Laboratory and sampling techniques to discover background variables, 111
Labov, William, vii, 89, 95, 119, 123
Lacey, John, viii
Lack of research into psychosocial deprivation, 15
Lactating female and offspring buffered against extreme responses to stress, 250
Language
  Baltimore children, test on, 119–120
  basic research needed on development of, 156–157
  Center for Applied Linguistics, the, 118, 119
  "codes" used by speakers, 119
  deprivation and adult linguistic functioning, 123–125
  development, 58
    and stimulation, 294
  educational method developments, and, 118
  English, "network" type heard over mass media, 122
  focus in the home, degree of, 102
  French-Canadian versus Continental type, 122
  ghetto, patterns in the, 119
  John Henry type spirituals, and, 123
  language intervention, nonstandard English, in, 157
  language learning a basic process, 41
  Languages in Contact, 120
  linguistic behavior of children, studies needed on, 156
  linguistic development and demographic variables, 111
  linguistic functioning in children, 117–123
  linguistic test items and social background, 104
  Mexican-American's bilingualism, 117
  Negro children, in, 120
  Negroes in the U.S., used by, 118
  New York City, in, 122
  nonstandard Negro English, 120
  Puerto Rican Spanish influence in English, 120
  speech homonyms in Negro and Spanish children, 120–121
  syntactic and semantic analysis, 125
  thought, as a tool for, 101
  values associated with, exemplified, 122
  vernacular words never spelled, 121
  vocabulary acquisition in early childhood, 126
  which should be used in instruction—street or standard?, 284
LaVeck, Gerald D., vi
Lawbreaking and social class, 31
Learning
  see also Mediation processes
  aptitude, and, 141, 142
  basic processes in disadvantaged adults, 152–153
  computer-assisted, 284
  cognitive and associative, 154–155
  concepts of, overlapped by other concepts, 114
  contingency, 112
  emotional blocks to, 21
  investigations of adult learning, 162
  learning abilities and intelligence relationships, 137
  learning and performance, 278, 282–285
    biological and genetic input, 282
    biological deprivation, and, vi
    linkages with psychology, 282
    overall perspective, 282
    psychological deprivation, and, vi
    psychology, linkages with, 282
    research needs, 282–285
    social deprivation, and, vi
  "learning how to learn," 131
  learning processes
    adult disadvantaged, of the, 139
    hierarchical arrangement of, 132
    role functioning, and, 37–38
  retarded by a low-protein diet, 244
Lebowitz, Meryom, 271
Lepers alleviate their stigma condition, 54
Leprosy
  social misconceptions regarding, correction of, 54
  stigma, a, 54
Lesser, Arthur, viii, 105, 106, 111
Levine, Seymour, vii, 229, 250
Lieberman, Morton A., vii, 3, 89, 143, 144, 145, 177
Lindsley, Donald, vii, 229–269, 271
Lippitt, Ronald, viii, 271
Lipton, Morris, viii

- Literacy skills
  - development
    - military, 153
  - teaching, 139–142
    - ability grouping in, 141
    - individualized teaching versus lecture, 141
    - lecture versus individualized instruction, 141
    - programmed instruction in, 141
    - rate of learning versus learning to criterion, 141–142
  - training techniques, 140–142
- Liver enzyme deficiency and intelligence, 246
- Liver, pathological changes in caused by malnutrition, 243
- Little People of America, the, 54
- Loban's New York City work, 156
- Longitudinal studies needed, 277
- Longitudinal studies, support of, 150
- Lorge-Thorndike Intelligence Test, the, 106
- Low self-esteem, 46
- Lower-class socialization and interpersonal skills acquisition, 46
- Luria, A. R., 127

M

- Maintenance of order, family emphasis on, 13
- Male role models in home, 3
- Malnutrition
  - *see also* Nutrition
- Malnutrition
  - arrested development, and, 242
  - countries with children suffering from, 243
  - defects, causing, 243
  - malnutrition model in deprivation, 92–94
  - rats, experiments with, 244
  - U.S., in the, 293
- Manus of New Guinea, remarks on, 99
- Marasmus, 243
- *Marginal Man and Military Service*, 139, 153
- Marginal man—does he survive?, 288
- Marion Blank tutorial language program, 134
- Marriage, an appropriate time for, 194
- Masks needed for interpersonal control, 44
- Mass media providing social models, 40
- Maternal behavior and social reinforcement, 21
- Maternal deprivation, 2, 3
  - deprivation reversal study of Skeels and Dye, 56–57
  - effects not irreversible, 58
  - emotional attachment formation, and later, 57
  - infant's lack of early stimulation, and, 56–59
  - lack of studies in, 58
  - major forces in child's development, and the, 59–63
  - mother-child emotional relationship, 56
  - physical and behavioral capacities, and, 242
  - stimulus restriction in middle infancy, the results of, 58
  - studies emphasis, shifts of, 56
- Maternal factor in a postnatal electric shock experiment, 250
- Maternal health and nutrition and infant growth, 241–245
- Maternal social deprivation
  - behavioral pathologies following, 294
  - pathologies following, 255
- Maternal undernutrition, 241
- Mating, differential assortive, 294
- Maturation
  - indices, physical and mental, 155
  - growth and development, 231–240
  - malnutrition, and, 243
  - maturational needs and lack of stimulation, 93–94
  - maturity and productive work style, 23
  - maturity, psychosocial deprivation eventuating in, 2
- McClearn, G. E., vii, 229
- McConnell, John W., viii
- McGaugh, James L., viii
- Mechanisms for change in opportunities, what are they?, 207
- Median achievement scores tabulated, 110
- Mediation processes
  - *see also* Learning
  - adult disadvantaged, in the, 139
  - current research problems in verbal mediation, 132–137
  - phenomena
    - associative clustering, 130
    - cross-modal transfer, 131

    experimental acquired mediation, 129–130
    far transposition, 129
    labeling, 128
    listed, 128–132
    learning set formation, 131
    mediated or semantic generalization, 128
    reversal–nonreversal shift, 129
    semantic generalization, 128
    syntactical mediation and mnemonic elaboration, 131
    verbal self-reinforcement, 130
  Russian work in research on, 127
  stimulus elaboration, making for, 127
  stimulus reduction, making for, 127
  types of, 127–132
  verbal mediation referred to, 127
Mediation theory and research, recent importance of, 126
Mediation, verbal, current research problems in, 132–137
Menninger Clinic, the, 24
Mental abilities, factorial organization of, 105
Mental and physical maturation indices, 155
Mental development
  contrasting theories of, 126
  cumulative learning model of Gagne, 126
  growth-readiness view of, 125
  learning a major factor in, 125–126
  nature of, the, 125–126
  neural structures, and, 126
  physical growth, and, 155
  proteins and vitamins, and, 152
  role of verbal mediation in, 125–137
Mental functioning of patients in institutions, 147
Mental health problems and low-self esteem, 29
Mental hospital patients' reaction to relocation, 145
Mental hospitals, change from custodial to therapeutic care in, 146
Mental illness, 2
  stigma theories, and, 54
Mental maturity, California Test of, 106
Mental patient, alteration in the social-physical world of, 146, 147
Mental patient, institutionalized, characteristics of, 147
Mental practice of behavioral patterns, 9
Mental retardation, current interest in, 231–232
Mexican-American children, tests of, 105
Middle-class families, achieving behavior, and, 22
Middle-class status, imaginative expression, and, 11
Middleground in understanding phenomena of psychosocial deprivation, 274
Military service draftees, data on, valuable, 161
Miller, S. M., 211
Mischel, Walter, vii, xiii, 34
Mobility, educational, 46
Models for child to emulate, the provision of, 61
Models of deprivation summarized, 92–99
Monge, Ralph, vii, 3, 89
Mongiardo, Nicholas, 271
Mongolism (Down's syndrome), 248
Monkey
  EEG rhythms in the, 235
  reflexes in the, 235
  sensory experiments on, 237
Moral behavior
  determination of, 32
  ego development and, 33
Moral character, basic research findings on, 32
Moral ideology, class differences in, 33
Moral standards and social-ethnic status, 32
Moral values, development of, 31–35
Morbidity of aged, comparisons, 143
Moro reflex present in the fetus, 233
"Most people used to be poor," 189
Mother, absence of, the, 3
Mother and child, affectional interaction between, 3
Mother-child interactions, 250–251
  a two-way process, 294–295
Mothering, inadequate, commonplace, 242
Mother's social class and child's scholastic performance, 112
Motivation and cognition-distinction between, 8
Motivation and personality—underlying dimensions not yet established, 277
Motivation, Nebraska Symposium on, 239
Motivational characteristics, 102
Motivational processes, 36
Motivational quotient, need for development of a, 280

Motor disabilities in children, stigma research on, 53
Motor restlessness, adult, fantasy development, and, 12–13
Multiple-failure children—no organization accepts responsibility for, 204
Multiple regression equation predicts mental age, 155

N

National Institute of Child Health and Human development, v, 271, 273, 275, 278, 290, 291, 293
  intervention programs, study of, 290
  personality research, and, 281
  planning committees of, vii
  programs of, three, v
  Task Forces of, 1, 2, 5, 8
National Laboratory on Early Education of the U.S. Office of Education, 101
National Teacher Corps, the, 205
Natural scholastic abilities suppressed, 36
Nebraska Symposium on Motivation, 239
Need for achievement, the, 16–18
Neglect of physical needs—child's attempt to satisfy own needs, 37
Neglect, parental, 64
Negro, the
  language used by, 118
  linguistic difficulties subtle and complex among, 117
  Negro boys interact with few employed Negro, men, 194
  Negro children, tests on, 105
  Negro mother-child interaction studies, 112
  optimism in, 25
  socioeconomic status levels, and, 106
  understanding of being, 7
  United States, in the—probability of exposure to stigmatizing environment, 4
  white children, and, intelligence test results compared in, 106
  white studies, and—achievement, and the need for, 18
Nervous system
  development
    and protein, 241
    and sensory stimulation, 254
  fine structure development in, 254
  sensory-perceptual deprivation's effect on, 251–256
Neural mechanisms and hormone actions, 249
Neural metabolism, recent work on, 241
Neural metabolism under stimulation deprivation, 253–254
Neural structures,
  disuse in older adult, 94
  growth affected by stimulation, 93
  mental development, and, 126
Neurochemical investigatory techniques need to be used in further experiments, 254
Neuroendocrine changes, research needed on, 251
Neuroendocrine mechanisms in stimulation of mother and infant, 249–251
Neuron, changes within the, 254
New ideas, disadvantaged youth resistant to, 29
New York City ethnic groups' socioeconomic changes, 117
New York City, speech stigmatization in, 122
Newborn
  brain activity of, 233
  instinctive movements in the, 237
Nineteenth-century language processes in the U.S., 117
Non-distractible child, the, 49
Nonstandard English, language intervention and, 157
Nonstandard Negro English, analysis of, 120
Normal-disabled interactions observed, 52
Normative control used by working-class mothers, 112
Numerical ability tests, ethnic groups, on, 106
Nutrition
  see also Malnutrition
  development, and—studies needed on, 292, 293
  eating habits and cognitive development relationships, and, 152
  genetic endowment interactions, and, 241

  infectious diseases and, 241
  maternal health and infant growth, in, 241–245
  nutritional requirements standards, 2
  pregnancy and lactation, in, 243
  protein-calorie deficiency disease, 243–244
Nyhan, William, viii, 271

O

Objective standards of deprivation, 91
Occupational experience can be self-fulfilling, 24
Occupational foreclosure on vague grounds, 23
Occupational mobility, horizontal, 24
Olson, David R., 135, 137
Ontario Institute for Studies in Education, Toronto, 135
Operation Head Start, 95, 101, 119
Optimism reported in Negroes, 25
Oral reading, monitoring of, 156–157
Organisms, the behavior of social scientist and the, 231
Organizations impinging on individual simultaneously, 290
Oriental-American children showed least test result differences from white children, 108
Orientation, effective task, 21–24
Orientation, present, planning perspective, and, 101
Otis, Leon S., viii
Over-generalizations, the fallacy of, 190–191

P

Paired associate learning, 103
Pair-wise clusters, idiosyncratic, 136
Parasites and malnutrition and anemia, 243
Parent–child deprivation measurements, 91
Parent–child interaction in presence of stigma, 52
Parent–teacher mistrust, 205
Parental concern limited in focus, 31
Parental expressions of inadequacy, 29
Parental models and fantasy play, 12
Parental rejection
  adult dependence, and, 15
  aggression, delinquent, and, 15
  outcomes, and its, 65–66
Parental roles, culture differences in, 17
Parental self-respect, lack of, 100
Parental warmth, intellectual achievement, and, 18
Parents
  attitudes and responses of also determined by child's characteristics, 48
  stimulus complexes presented by, 115
  why do they act the way they do?, 287–288
Partial knowledge and the physician, 61
Pathologies associated with maternal-social deprivation, 255
Patterned light and visual functioning, 252
Pauling, Linus, 152
Pavlov, 127, 237, 239
Peasant society and culture, 99
Perception, motivation and learning and the psychologist, 231
Performance and learning
  see Learning
Perinatal complications and newborn's environment, 245
Person attributes and actual behavior differences, 8
Personal characteristics and deprivation, 188
Personal controls, development of, 31–35
Personal efficacy and self-confidence, 19
Personal orientations and interpersonal competence, 45
Personal tendencies
  alienation, 45
  cost of failure, the, 45
  external and internal control, 45
  low self-esteem, 46
  rigidity and rule boundedness, 45
  their effects on interpersonal competence, 45–47
Personality
  acquisition of, the, 67
  subject matter of, the, 8
Personality development, 278–282
  action programs and interventions, 281–282
  dependency, and, 13
  disadvantage, and, 66
  overall perspective, the, 278–279

Personality development—Continued
  psychosocial deprivation, and, vi, vii, 1–87
  research needs, 280–281
  research policy, 281
  social attachments, and, 14
  what is it? 280
Personality-clinical psychology, 7
Personality, the deprived—a concept, 66
Personality traits and heredity, 246
Perspective, integrative, needed, 275–276
Perspectives on research needs, 159–161
Pessimism and low self-esteem, 28
Phenomena of mediation listed, 128–132
Physical disability a stigma, 51
Physical growth and mental development, 155
Physical handicap a stigma, 50
Physical health, obstacles to attainment of, 1
Physical integrity of aged, institutionalization, and the, 142
Physical, mental and social interactions, the importance of, 231
Physical punishment, 31
Physically aggressive behavior and social class, 32
Physically handicapped and normal persons, interactions of, 194
Physically handicapped, social aspects of deprivation and the, 188
Physically normal and physically stigmatized persons, interactions between, 52
Physician has to act on partial knowledge, 61
Physiological states and its mechanisms, 239
Physiology and biochemistry conditioned by factors, 239
Piaget, 9, 103, 113, 155
Piaget conservation tests, 136
Piaget tasks—are they biased?, 136
Piaget-type intelligence scales, 103
Piaget-type studies, 133
Piagetian theory testing, 155–6
Piaget's encompassing formulations, 279
Planning ability, poor, adult, 12–13
Plantar reflex present in the fetus, 233
Platt, B. S., vii, 229
Playgrounds, the need for, 238–239
Pluralism, cultural, 94
Politeness and the socialization process, 44–45
Political pressures and intervention programs, 278
Polyphagia in children, 242
Poor Americans divided into four groups by Miller, 211
Poor families, educability of children from, 126
Poor people in United States, there have always been, 95
Poor, the—a distinct subculture?, 191
Poor, why does America have the?, 196
Population density, 4
Population variances, 246
Populations, deprived, 191
Postintervention assessment, 150
Postural development, precocious, 244
Potency of models in child's development, 59
Poverty
  characteristics of, 192
  convertibility potential of deprived groups, 192–193
  correlates of, 190
  culture of, the, 191–193
  damaging capability, 97
  generational continuity between father and child, and, 192
  ideas for eliminating, 197
  persons in poverty areas and questionnaires, 62
  poverty culture and the American society's mainstream, 207
  poverty line in American society, 1
  research should be cross-cultural, 288
  self-sustaining culture, is it a?, 288
Power, privilege and wealth—social institutions governing, 187
Power relationships and expectations, 101
Practical or perceptive test items and social background, 104
Precocious language development in middle-class daughter, 58
Prenatal care and nutrition, 234
Preschool enrichment programs, meager gains from, 134
Prescott, J., 229, 271
Prestige, definitions of, 195
Primary mental abilities tests, 105
Problem-solving strategies, research needed on, 151
Problems, motivational, 102
Professionals related to disability, 203
Project Literacy, 118
Pronunciation problems of Negro and Spanish children, 121

- Protection of the inept from discrimination in education and employment, 210
- Protein, importance of, 241
- Protein-calories deficiency disease, 243–244
- Proteins and mental development, 152
- Proximal and distal environments, 4
- Psychosocial deprivation, v
  - action, not experiments, wanted, 62
  - apparent, 1
  - Armed Forces Qualification Test, and the, 141
  - behavioral science, and, 1
  - biological defect, and, 6
  - broad theory on, the lack of, 27
  - bureaucracy, and, 202–204
  - conceptual milieu, the, 113
  - conceptualizational confusion in research on, 91
  - considered from many viewpoints, 273
  - contingencies, absence in environment, 93
  - crime and delinquency, eventuating in, 2
  - cultural disparity model in, 94–96
  - current knowledge on, 63
  - definitions of, 189
  - deviant role behaviors, and, 36
  - discrimination against ethnic groups and poor, and, 96–97
  - disparities between individual needs and society's need, is the result of, 209
  - dynamics of processes leading to, research needed on, 211
  - early social deprivation, 255–256
  - economic and social loss to nation, 24
  - economic type, 92
  - effects of on learning, 112
  - "ego strength" traits development, and 32–33
  - elements in the environment, and, 91
  - environmental conditions, optimal, deviation from, and, 97–99
  - evironmental input patterns, research needed on, 161
  - environmental studies needed, 283
  - environmental trauma model in, 97
  - ethnic groups' in New York City socioeconomic status changes, historic, 117
  - ethnic status, and, 6
  - gap between research and practice, 214
  - half-way toward understanding phenomena of, 274
  - human infant, and the, 56
  - imagination, the employment of, and, 10
  - impulse control systems undermined by, 34
  - inadequacy of social institutions in, 94–95
  - institutional structures, and, 6
  - interaction between developmental maturational needs and lack of stimulation, 93–94
  - interdisciplinary confrontation of problem supported, 275
  - interpersonal competence, and, 35
  - IQ test in research on, 103
  - knowledge, current, review of, 101–149
  - knowledge on, more required, 67
  - lack of alternatives for action, and, 96
  - lack of exposure to beneficial stimulation model, 92–93
  - lack of pattern in experiential world, as a, 93
  - language focus in home, 102
  - learning and performance influencing, 89–183
  - learning of behavior not rewarded by middle-class society, 94
  - linguistic functioning in adults, and, 123–125
  - linkages in, 278
  - low self-esteem and, 28–30
  - maladaptive behavior of victims of, 23
  - maturity, eventuating in, 2
  - mechanisms by which people cope with, 213
  - mechanisms of exchange in, 91
  - mental development and the role of verbal mediation in, 125–137
  - mental illness, associated with, 2
  - model of components of, 5
  - models of, summarized, 92–99
  - monotony or strong stimulation affecting offspring, 250
  - New Guinea Manus analogy, 99, 100
  - not deficient in learning ability, adult is, 139
  - not generally apparent, 1
  - organizing rubric, an, 273
  - personality development, and, vi, 1–87
  - personality development, an overview of, 1–7
  - public must be communicated with, 214
  - race, and, 6, 247–249
  - research findings and their relationship to, 47–50
  - research into conditions after infancy lacking, 15

Psychosocial deprivation—Continued
  research issues, important, 287
  research policy for, towards a, vi
  research problems and needs summarized, 149
  research required, much more, 66
  research requires massive and urgent support, 69
  research, review of, 8–63
  research reviews and implications for future research, 63
  research using motivational factors recommended, 279
  responsibility and leadership, eventuating in, 2
  schema for, illustrative, 6
  self-esteem development and, 27–31
  sequence and timing in early learning, and, 154
  social class, and, 6
  social evaluation, is, 191
  social phenomenon, a, 293
  social-role development difficult, 35
  social-role learning, 39
  social structural model in, 96–97
  sociological approach to, a, 187
  specific use-sense of term defined, 28
  status of deprived adults, 137–142
  stigma, and, 50–51
    see also Stigma
  subjective deprivation as a corollary of, 99–101
  subtle and private ways, disadvantaged in, 67
  syndrome, it is a, 64
  syndrome-like quality in the effects of, 274
  synonymous with absence of admired pro-social models, 34
  temperament and behavior in relation to, 46–50
  temperamental differences in children, 46
  terminological confusion in research on, 91
  topics selected for research attention, 8
  toward a research policy for, 271–295
  two-day conference on research policy for, 295
  two standards of, 91
  underdeveloped countries, in, 232
  underdeveloped resources model in, 97
  understanding is confounded by problems, 276
  urban ecology, and, 6
  U.S., in the, 232
  use of longitudinal data, 24
  work dismissals and, 24
  work-related behavior consequences, 23
  youth unemployment rate, and the, 24
Psychiatric disturbance risk in relocating elderly, 145
Psychiatrist and human development, the, 231
Psycholinguistic operations, 152
Psycholinguistic studies, 156
Psycholinguistic tests in schoolroom, 121
Psychological characteristics, need to "clean up" the profile of, 280
Psychological decline in aged in institutions, 144
Psychological factors in physical growth, 242
Psychological loss associated with physical illness onset, 146
Psychological studies in institutional environments, 280–281
Psychological variables, social class a gross indication of, 22
Psychological well-being of elderly in institutions, 142, 148–149, 159
Psychologist and human development, the, 231
Psychology and learning and performance linkages, 282
Psychology of the aged, 148
Psychometrics, a base for new, 279
Psychometrizing Piaget conservation tests, 136
Psychophysiology, 240
Psychophysiology and motivation (Lindsley), 239
Psychoses, genetic basis for development of, 246
Psychosexual development, 38
Psychosocial factors' influence demonstrated, 242
Psychosocial vitiation an exact term, 28
Psychosomatic symptoms and low self-esteem, 28
Public must be communicated with on deprivation, 214
Public policy, implications for, 213
Puerto Rican children, tests on, 105, 106
"Putting oneself in the other's shoes," 42

Q

Quantum jumps, discrete quality of, 136
Questionnaires, response of parents to—
  socioeconomic status of parents and, 108

R

Race and psychosocial deprivation, 6, 247–249
Racially-isolated schools, anxiety of Negro pupils in, 20
Rats, environmental experiments on, 237–238
Raven, Bertram H., vii, xiii
Raven's Progressive Matrices test, 136
Reactive behaviors, stigmatized-nonstigmatized individuals, in, 52
Reactive characteristics—intrinsic, not determined by postnatal experience, 47
Read, Merrill S., 271
Reading
  arithmetic tests at grade 6, 107
  deficiency, 6
  learning disability and school tests, 101
  oral, monitoring of, 156–157
  reading for reading's sake ineffective, 140
Receptors, shifts from "hear" to "distance", 133
Reciprocity and exchange development, 43
Reflex and behavioral development and brain maturation, 233–236
Reflexes in the monkey, 235
Reflexes present in fetus, 233
Reformatory inmates, tests on, 20
Regularity, role of in brain function and behavior, 239–241
Rehabilitation counseling, 203, 204
Reinforcement an important aspect of learning process, 153
Reinforcement History Questionnaire, 20
Reinforcement principles for disadvantaged adults, 140
Reinforcement, social, child's development, in, 59
Relocation of aged, forced, 144
Report of the National Advisory Commission on Civil Disorders, 200
Representational modes of functioning, 102
Research
  findings and psychosocial deprivation, 47–50
  funding, flexible, 290
  future, implications for, 66–69
  longitudinal, the need for, 67
  needed on language and language development, 156–157
  needs, perspectives on, 159–161
  people needed for, 292
  policy for psychosocial deprivation, towards a, VI
  policy planning for psychosocial deprivation, 271–295
  priorities recommendations, 161–162
  problems and needs summarized, 149–159
  psychosocial deprivation, on review of, 8–63
  relevant to stigma conditions, 51–56
  research-action programs, scientific usefulness of, 160
  research on systematic relationships rather than ad hoc relationships, required, 66
  reviews, commentary on, 63–66
  strategies for improving quality of research on psychosocial deprivation, 149–151
Response to visual stimulation, studies needed on, 253
Responsibility, psychosocial deprivation eventuating in, 2
Retardation, growth, 242
Retardation, mental, 242
Retirement, an appropriate time for, 194
Retirement policies and the aged, 209
Reversal-nonreversal paradigm, the, 129
Riegel, Klaus F., vii
Riesen, Austin, vii, 229–269, 271
Richardson, Steffen, vii, 271
RNA, 245, 253, 254
Role definitions changing, 195
Role-learning
  basic process, a, 41
  and imposed sanctions, 44
  and interpersonal competence, 45
Role modeling, the importance of, 44
Role models for children, 12

Rorschach M responses studies, 10
Rorschach responses, 34
Rosenberg, Mae E., 271
Rosenthal effect, the, 289
Rosenzweig, Mark, viii
Ross, Sherman, viii
Rotter's "sense of internal control" theory, 18
Rules and regulations reasonable and rational, 30
Russian research on mediation processes, 127

S

Schaffer's study, 49
Schema for psychosocial deprivation and development, illustrative, 6
Schiefelbush, Richard, viii
Schizophrenia, studies on, 246
Scholastic achievement, 18
Scholastic achievement tests, regional differences in Coleman data, 109
Scholastic skills differentiation, summary of research on, 108
School and work relationships, 210
School anxiety, personality factor, a, 21
School achievement limitations and socioeconomic status, 101–112
School dropouts—subconcepts needed for types of, 211
School failure, reasons for, different, 8
School incompetence to overall incompetence—a stigma spread, 56
School performance, adequate, 2
School Readiness, 133
School segregation a goal of black militants, 200, 201
School systems isolated from health institutions, and vice versa, 160
Schools
  and those failing to meet academic criteria, 210
  can they overcome handicaps stemming from home? 204
  community control of, 200, 201
  local control of may ultimately provide benefits, 201
Scientist and practitioner should cooperate toward intervention, 274
Scientist's stance is analytic, 276
Scope of deprivation frame work, 5–7
Scott, Robert A., vii, 185
Segregation
  cultural deprivation, and 94
  racial, 200
    detrimental effects of, 110
  residential, 199
Self-attitudes, a cluster of, 278
Self-concepts, enabling, needed, 158
Self-confidence, 278
  and personal efficacy, 19
  self-confidence–IQ correlations, 19
Self-control deficits lead to adverse effects, 35
Self-control patterns influenced by observation of social models, 34
Self-devaluation and ethnic discrimination, 31
Self-devaluation and scholastic achievement, 20
Self-esteem, 278
  conditions associated with development of, 30–31
  defined, 27
  development of, 27–31
    parental self-esteem and, 30
    peers' advice and assistance encouraged by parents, 30
  disadvantaged youth, and, 28
  discrimination, ethnic, 31
    absence of conditions needed for, 30
    acceptance of child necessary to, 30
    respect of child necessary to, 30
  level of reflects extent of successes that approach expectations, 27
  low, 46
    anxiety levels and, 28
    consequences of, 28–30
    destructive effects of, 28
    failure, expected, and, 29
    social withdrawal, and, 28
  personal judgment, a, 27
  psychological state, a central, 27
  synonyms used for, 27
Self-evaluation of minority child, 55–56
Self-preservation and identity (Goffman), 41
Self-respect, lack of parental, 100
Semantic differential responses, positive, 26
Semantic generalization, 128–129
Sensitivity training common in middle-classes, 42
Sensory activity, newborn, in the, 237

Sensory activity preserves life, 236–237
Sensory bombardment producing damage to neurons, 251–252
Sensory compensations, possibility of needs to be explored, 152
Sensory deficiencies in the aged, 152
Sensory deprivation, 2, 97
  effects of, 124
  studies, 294
  studies in Sweden, Russia and the U.S., 253
Sensory experience and brain development, 256
Sensory inputs, rich variety of work orientation, and, 21
Sensory-perceptual deprivation and the nervous system, 251–256
Sensory systems share a common response to stimulation, 253
Sequence and timing, the function of in early learning, 154
Sequential Tests of Educational Progress, 108
Sex chromosome anomalies, 248
Sexual promiscuity, early, 12
Sherwood, Silvia, vii, 185
Shostah, Arthur, vii, 185
Sigel, Irving E., vii
Sinex, Marott, viii
Singer, Jerome L., vii, xiii, 9, 10
Situational identities, establishing and maintaining, 43
Skeels and Dye's deprivation reversal study, 56–57
Slover, Darrell, 147
Slow-to-warm-up child, the, 47, 48, 49
Smith, M. Brewster, vii, 233, 235, 271
Smoking, maternal, and fetal heart rate, 251
Social acceptance, low self-esteem and, 29
Social accomplishment, 1
Social action and research policy, interface between, 274–275
Social action—behavioral scientists, combined roles of scientists and participant in, 61
Social action programs, national, vi
Social agencies' staff attitudes toward deprived persons, 188
Social agents as models, 39
Social categorization, 6
Social change and social structure, 196–206
Social class, deprivation, and, 6, 98
  distinctions and maternal behavior toward 4-year-old children, 21
  educational aspirations, and, 25
Social communications in deprived adults, 138
Social competency, overall, 281
Social contact avoided by deviants, 54
Social contexts as research settings, utilization of, 150
Social deprivation, early, 255–256
Social-developmental psychology of human lifespan needed, 161
Social disorganization, derivative consequences of, 40
Social effectiveness and low self-esteem, 30
Social-ethnic status and moral standards, 32
Social functioning, dependency development and, 13
Social institutions governing power, privilege and wealth, 187
Social institutions, inadequacy of, constituting deprivation, 94–95
Social interaction, psychosocially deprived family, in the, 16
Social intervention
  and action programs and current knowledge of psychosocial deprivation, 273
  and behavior modification, 160
  as experiments, utilization of, 150–151
Social isolation, 97
Social isolation, total—"the most severe deprivation condition," 255
Social learning of child characterized by behavior patterns acquisition, 116
Social mobility and education, 205
Social normalization, 9
Social organization's rewards and punishments, 286
Social positions, a vocabulary of, 41
Social psychological ecology, studies of needed, 68
Social psychology of morphology needed, 293
Social reinforcement, 39
  behavior approval-disapproval example, 39
Social relationships, opportunities for breadth in, 41
Social role acquisition during childhood and adolescence, 35
Social role, definition, 35

Social role development, 35–40
  basic element of, a, 36
  cognitive processes and, 37
  psychological underpinnings of, 36
  unifying concepts in, 38
Social-role performance and process, varieties of, 36
Social-role performance needs, 37
Social-role taught by both parent and peer, 38, 39
Social sciences relatively underdeveloped, 277
Soical status and hypothetical school problems, 26
Social status, values, attitudes and beliefs, and, 25
Social stimulation, socially disadvantaged groups, in, 154
Social stratification and role performance, 197
Social structural model in psychosocial deprivation, 96–97
Social structure
  an environmental influence, 38
  analysis, admits many levels of, 286
  socialization, and, vi, 185–228, 278
    action, programs and intervention, 291–292
  overall, perspective, 285–287
  research needs, 287–290
  research policy, 290–291
Social structures, functional level of individuals affecting, v
Social system "a trap," 22–23
Soical welfare area—dearth of competent researchers in the, 214
Social welfare functionaries—why do they act the way they do? 287–288
Socialization and social stigma, 193–196
Socialization and social structure, 185–228
  list of research issues, 207–210
  research strategies for, 211–213
Socialization
  nonparental agents' roles in, 68
  practices, family school anxiety, and, 20
  television's role in, 67, 68
  Socioetal components in psychosocial deprivation, 94
Society, Personality, and Deviant Behavior, 7
Socioeconomic status
  differences in cognitive and educational ability, 101–112
  educational achievement, and, 107–110
  imaginative performance and, 12
Sociolinguistic studies, 121
Sociomoral perception, maturity of, 33
Soldiers, White and Negro, tests on, 19
Solitary play, organized sequences of, 10
Solomon, Daniel, vii, xiii
Sontag, Lester W., viii
South Bend, Indiana, test on unemployed adults, 138
Space test area, ethnic groups tested, 106
Spieth, Walter, 271
Sports, the benefits of, 238
Sputnik, special stimulus of, 279
Standard achievement tests and American Minority ethnic groups, 108
Standards of deprivation, two, 91
Stanford-Binet IQ test, 107, 110, 36, 155
Starvation, chronic, 241
Status, socioeconomic, learning and, 101–112
Steroid response and stimulation, 250
Sticht, Thomas, vii
Stigma
  see also Deviants
  advanced age, and, 195
  alleviation of stigma condition by dwarfs and midgets, 54
  attitudes toward stigmatized individuals, 51
  bureacracy, and the, 203
  "destigmatization," 54
  environment and development interferences, and, 51
  factor in social interaction, a, 50
  factors in the problems of, list of, 16
  leprosy, 54
  mentally ill, and the, 54
  notion of, the 50–55
  research catalogued according to attitude object, 51
  research relevant to, 51–56
  school incompetence and overall incompetence, 56
  social-emotional outcomes, and, 50
  social interaction and, 194
  socialization and social stigma, 193–196
  stigmatized children, mothers and teachers' attitudes toward, 52
  stigmatizing experiences, excess of, an, 2
  stigmatizing traits and learning how to be disabled, 193
  types listed, 50

- Stimulation
  - brain development, and, 237
  - child's "hunger" for, 116
  - early
    - comparative importance of, 154
    - maternal deprivation, and, 56–59
  - environment, and, 113
  - excess of certain kinds a disadvantage, 2
  - functional, 4
  - infant stimulation and later development, 251
  - lack of, 93
  - lack of appropriate, 14
  - lack of exposure to beneficial type of, 92–93
  - lack of pattern in, 93
  - mother and infant stimulation, neuroendocrine mechanisms of, 249–251
  - neural structures growth affected by, 93
  - newborn strive for, 237
  - of child and environmental manipulation, 22
  - optimum for, 252
  - sensory, nervous system development and, 254
  - steroid response and, 250
  - stimulation and the child—a fallacious proposition, 116
  - stimulation deprivation and neural metabolism, 253–254
- Stimuli, absence of means no acquisition of learning, 113
- Stimuli and the infant, 115
- Stimuli, complex, specific implications of the provision of, 115–117
- Stimuli—how do they affect child's behavior?, 117
- Subcomponents of personality and cognitive traits, studies needed on, 249
- Subjective deprivation as a corollary of psychosocial deprivation, 99–101
- Subjective standards of deprivation, 91
- Sufficiency, standards of, 2
- Summary Statistics on Project 100,000, 141
- "Super ego" a gross oversimplification, 35
- Superordinate goals and child's development, 60
- Survivorship and dropout, research on, 124
- Sussman, Marvin, vii, 185
- Stress
  - child's reaction to, 47
  - emotional behavior and, 250
  - lactating female and infant buffered against extreme responses to, 250
  - physiology, 239, 240
  - plasma steroids, and, 249
  - responses and endocrines, 249–251
  - stress states symptoms, balloon analogy, 240
- Symbolic behavior, research needed in, 151
- Synaptic growth investigation needed, 254
- Syndromes of personality, consequences of disadvantage, 65

T

- Tactics, acquiring a repertoire of, 43–45
- Tarjan, George, viii
- Task Forces of National Institute of Child Health and Human Development, 1, 2, 5
  - *see also* NICHD, Task Forces
- Task-oriented behavior, successful, 23
- Teacher behavior and teacher expectations, 26
- Teacher dependency and intellectual growth, 55
- Teacher expectancies and stigmatized children, 55
- Teacher has little knowledge of student's out-of-school activities, 150
- Teachers' beliefs about children's intelligence affect children's performances, 123
- Teachers, effective, need for studies of, 68
- Teachers overloaded with responsibilities, 63
- Teachers the only socialization agents of children, 63
- Teaching literacy skills, 139–142
- Teaching, the professionalization of, 205, 206
- Technical work structure, impersonality of, 23
- Television
  - irrelevant to socialization, 68
  - socializer, as a, 67, 68
  - viewing and child's imaginative development, 11
- Temperament
  - behavior and psychosocial deprivation, and, 46–50
  - categories of, listed, 47
  - characteristics of, 47

Temperament—Continued
  constellations listed, 47
  defined, 46, 47
  intellectual competence, compared with, 46
  modified by environmental influences, 46
  teachers should be sensitized to different patterns of, 63
  temperamental reactions in children, 47, 48
  transmuted by environmental circumstance, 46
Text Anxiety Scale for Children, 20
Theory, comprehensive, required, 66
Theory of environment, lack of, 3
Thomas, Alexander, vii, xiii
  Tjossem, Theodore, 271
Tobin, Sheldon S., 147
Toronto, University of, the, 134
Townsend's summary of institutionalizational environments, 142
Training in a functional context, 140
Training strategies for disadvantaged adults, 140–141
Transgression, reaction to, age development trends, 32
Transition in type of learning performance in children aged 5 to 7, 132–133
  paradigms of listed, 133
Transposition paradigm, the, 129
Trapped in cycle of poverty and discrimination, persons, 198
Tuddenham, Read, 136

U

Uncertainty, interactional, 51
Underdeveloped resources model in psychosocial deprivation, 97
Undereducation and the disadvantaged adult, 139
Undernourishment a new charge in the U.S., 192
Underprivileged groups—present knowledge of verbal abilities of, 120–123
Unemployed adults, background knowledge possessed by, data on, 138
Unemployed—subconcepts needed for types of, 211
Unemployment
  chronic, 1
  self-esteem, and, 31
Urban crowding and social interaction, 98
Urban environment and achievement test results, 109
Urban ghettos and the schools, 206
Urban Language Study at the Center for Applied Linguistics, 118
Urban living and the aged, research needed on, 212
Urbanization and its social influences, 196
U.S. Defense Department, 161
U.S. national budget expenditures for military power, education, and health purposes, 190
U.S. Office of Education, 108
Utilization of older children in intervention program, 60

V

Values associated with language, 122
Values, attitudes and beliefs relevant to achievement, 25–27
Variables, environmental, list of, 6
Verbal abilities of underprivileged groups, present knowledge of, 120–123
Verbal ability tests, ethnic groups, on, 106
Verbal associative network, comparative studies of, 157
  Russian's powerful techniques in, 157
Verbal behavior
  data on, 122
  ethnic differences, and, 119
Verbal culture in which linguistic structures are embedded, 119
Verbal deprivation, 122
  a poor concept, 96
Verbal instruction, which language should be used—street or standard?, 284
Verbal-linguistic attributes, 8
Verbalization, facilitating effects of, 130
Veterans' Administration domiciliaries, 159
Violence as self-amusement, 12
Violence damaging capability, 97
Visual functioning
  chimpanzee experiments, 252–253
  kitten and cat experiments in, 252–253
  patterned light a requirement for, 252–253
Vitamins and mental development, 152

Vocabulary acquisition, 126
Vocational development studies, shift in emphasis required, 24
Vocational goal, preparatory steps, poor understanding of, 23
Voluntary delay of reward, 34

W

WAIS IQ of upper middle-class Negro mothers, 107
Walcher, Dwain N., 271
Wechsler-Bellvue Test, the, 106
Weinstein, Eugene, vii, xiii
Welfare agencies
  see also Bureacracy
Wernicke syndrome, the, 124
White, Sheldon H., 132, 133
Widowhood, research of sequelae of, 145
Willard, William R., viii
Williams, Marjorie, viii
Williams, Roger, 152
WISC test, the, 106
Wisconsin, University of, experiments of Dr. Heber at, 158
Withdrawal-isolation, 6
Women in American Society, the role of, 286
Women's educational attainment and recruitment into professions, 198
Woodside, Gilbert, 271
Word associations shifts in children aged 5 to 7, 133
Work-behavior a significant life-role, 24
Work, cultural estrangement from, 19
Work dismissals and psychosocial deprivation, 24
Work for the Blind, 203
Work for the Deaf, 203
Work orientation, 21–24
Worker attributes, listed, 24
World Health Organization, the, 61, 243

Y

Yellow pages of telephone book in a "practical concern" test, 153
"Yielding to temptation" on experimental measures of honesty, 31
Youth in the ghetto, 110

Z

Zigler, Edward, viii, 271

U.S. GOVERNMENT PRINTING OFFICE: 1969 O—332-951